

JULY 1956

40 CENTS

Consumers' Research

BULLETIN

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Outboard motors

Ready-made mounts for color slides

A new principle in heating

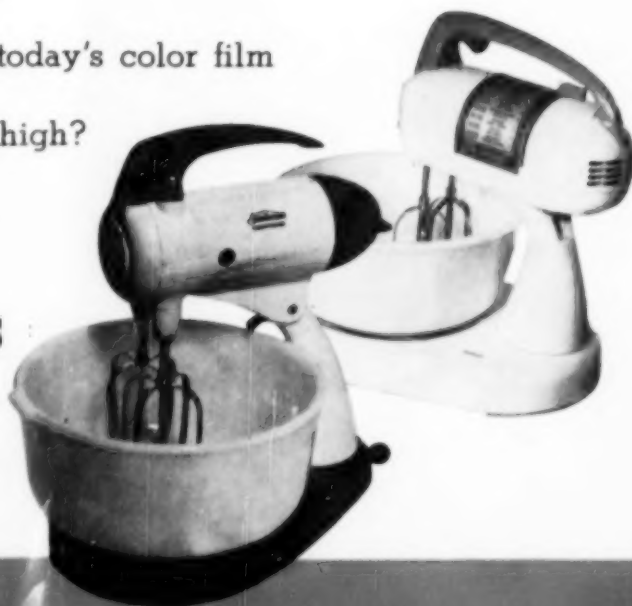
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Are automobiles priced too high?

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ELECTRIC MIXERS

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INSIDE FRONT COVER



CONSUMERS' RESEARCH BULLETIN

WASHINGTON, NEW JERSEY

THE MAGAZINE THAT GUIDES CONSUMER BUYING

JULY 1956 • VOL. 38 • NO. 1

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Off the editor's chest

WHEN SEVERAL automobile assembly lines were shut down recently to reduce the flow of finished models to already overstocked dealers, dealers heaved a sigh of relief, but consumers showed no particular interest. There was a loud outcry from Walter Reuther, head of the auto workers' union, demanding a union-management conference to do something about the situation, but it is not clear how such a meeting could do anything about the obvious fact that people simply aren't buying as many cars as can be turned out on the efficient assembly lines at the factories.

Just what causes this lack of demand is a matter of earnest speculation and study in many quarters. There was a recent congressional investigation of automobile industry practices that, as a kind of by-product, stimulated a flow of letters from consumers to their congressmen, setting forth their particular grievances against cars and car manufacturers—which were not the subject under scrutiny. According to *Automotive News*, the most common complaint was the difficulty of getting proper service under warranties. The second was the practical impossibility of consumers' finding out, before they signed on the dotted line, how much the car of their choice would really cost.

At present high prices, the purchaser of a new car quite understandably takes a dim view of one that has a lot of little things wrong with it, rattles and squeaks in the body, leaks in the windshield, doors that fit badly, out-of-round tires, and other examples of poor workmanship and sloppy assembly. Dealers usually make an earnest effort to correct these defects, but actually in many cases a poorly assembled job should be returned to

(Continued on page 30)

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Listings usually are arranged in alphabetical order by brand name (not in order of merit) under each quality or performance rating. A numeral 1, 2, or 3, at the end of a listing indicates relative price, 1 being low; 3, high. Where the 1, 2, 3, price ratings are given, brands in the 1, or least expensive group, are listed alphabetically, followed by brands in price group 2, also in alphabetical order, etc. A quality judgment is wholly independent of price.

The Consumers' Observation Post

THE ROTISSERIE BROILER is a popular item that is sadly lacking in quality at the present time. According to a department store housewares buyer, his customers would pay up to \$200 for a really well-made rotisserie. Currently, his returns due to unsatisfactory performance run about 50 percent of the sales, particularly on rotisseries priced at \$29.95. Retailing Daily reported that he found much of the trouble due to poor inspection at the factory, which was so bad that the store was obliged to unpack shipments and inspect each piece before it was placed on sale. He'd like to find a better-made rotisserie and so would his customers.

* * *

DANGER TO HEALTH from the use of certain pesticides is the subject of a statement issued by the Superior Council of Public Health of Belgium. Specifically, phosphorus compounds, hydrocyanic acid and its derivatives, nicotine, arsenic, products containing mercury, and chlorated hydrocarbides [chlorinated hydrocarbons] were held as necessary evils in improving crop yields and preserving stored foods, but also identified as dangerous to those who applied them and to consumers of foodstuffs in which there were residual amounts of these sprays and gases. The council recommended that, in rural communities, the local physician should warn the population of the dangers involved. The suggested program for use of toxic insecticides included: strict regulation of application according to season and locality; toxicologic studies on at least three different species of animals and of three successive generations, if possible, before use was permitted; education in proper use of such products; and establishment of maximum residues in certain kinds of produce.

* * *

IT IS EXPENSIVE TO REPAIR or try to extend the life of a mass-produced product. William Feather, who puts out an interesting little house organ, reported his difficulties recently in getting a number of items fixed, including a fountain pen, clock, and electric bed sheet. The pen, guaranteed for life, cost 35 cents for each repair. The electric sheet cost \$12 for repair, just half the price of a new one. The time the various items were in the shop varied from three weeks to three months.

* * *

INSTANT COFFEE is slightly cheaper per cup than vacuum-packed. Figures from the Pan-American Coffee Bureau indicate that about three pounds of roasted coffee are required to produce one pound of the instant variety. From one pound of instant coffee, you should be able to get 240 cups of coffee as against 60 cups from a pound tin of vacuum-packed. Figuring the price of the vacuum-packed type at \$1 a pound and soluble coffee around \$3.75, the prices come to 1.7 cents vs. 1.6 cents a cup. You pay your money and take your choice. There will be no messy grounds to throw away, with the soluble coffee, but also no aroma to tickle the palate.

* * *

CALIFORNIA HAS LIBERALIZED its earlier restrictions on fluoride products, according to Drug Trade News, May 7, 1956. The California State Board of Pharmacy will permit under special conditions the sale within the state of dentifrices containing more than 0.1 percent and mouthwashes containing more than 0.02 percent of fluoride ion. The board's executive secretary wishes it made plain, however, that his board is concerned with responsibility for enforcing the State's Poison Law which governs the sale of packaged poisons, and it has no responsibility for the fluoridation of public water supplies. The latter problem is the official concern of the State Department of Public Health.

MANY CAMERA USERS don't like the effects of the anti-trust consent decree worked out by the federal government in connection with a suit against the Eastman Kodak Company for monopoly of color film processing. The loudest complaints, according to The Wall Street Journal, come from users of Kodachrome who used to pay \$3.25 for a 20-exposure roll of 35 mm. color film, including processing of the exposed roll which was shipped direct to an Eastman laboratory in a special bag that came with the film. The finished pictures would be mailed back when they were processed, for the price of the film included the subsequent handling. Now the consumer is forced to take or mail the exposed film to his local dealer, who then sends it to Eastman or one of the competing processors, and the consumer must stop back for it or arrange to have it mailed when it is received by the dealer, all of which is time consuming, slightly more expensive, and a nuisance. At least two of Kodak's competitors, Pathecolor and Technicolor, have announced plans whereby a Kodachrome user may mail his film direct to one of their laboratories and get it back by mail. Technicolor, for example, provides for getting a processing bag from the dealer when the color film is purchased. The camera shops, as might be expected, welcome the new regulations, since they have an opportunity to sell the color film user some new equipment when he brings his roll in for development.

* * *

MUSHROOMS should always be bought at the grocery store. There is no practical or reliable test for determining the edibility of wild mushrooms, advises the Journal of the American Medical Association. The editor points out that even judging the edibility of mushrooms by observing whether animals will eat them is no guide, since rabbits, for example, can safely eat a variety that is deadly to man.

* * *

SOMETHING NEW IN TRAVEL REGULATIONS is the experiment being tried out this year by U.S. Customs Officials at the Miami International Airport. U.S. travelers who have been out of the country more than 48 hours and are bringing back not more than a hundred dollars' worth of articles purchased abroad, with no baggage or packages to follow, may make an oral customs declaration. The same procedure is also permitted those who have been out of the country less than 48 hours and whose total purchases do not exceed \$10. This is a commendable step in the direction of facilitating international travel. The Port of New York, however, will have complete examination of all incoming baggage to help check the Mediterranean fruit fly.

* * *

THE UPHOLSTERED FURNITURE INDUSTRY is beginning to use warranties against defect in workmanship and materials. Retailing Daily reports that the Kenmar Manufacturing Company is offering a warranty against defects of workmanship and materials which, however, does not apply to defects from neglect, misuse, or accidents, nor to the permanency of color or the wearing quality of fabrics. The consumer may well ask what good a warranty is anyway, if it does not take in these last two points. Furniture manufacturers admit that there is no relationship between the amount of money spent on an upholstered piece of furniture and the durability and color-fastness of the fabric. In other words, the price of the upholstery does not necessarily determine its serviceability. There is some talk in the industry of developing a quality control program that will include minimum standards, but at the present time the purchaser of upholstered furniture will have to depend on the knowledge and integrity of the dealer from whom the purchase is made. Among the specific defects covered by the Kenmar warranty are: cloth pulling out at the seams and welts, dye crocking and rubbing off on clothes, weaving imperfections, plastic tearing from poor workmanship, and discoloring from perspiration and hair oils.

* * *

THERE IS A NEW GRADE OF BEEF now on the market called "U.S. Standard." The fourth grade, U.S. Commercial, has been divided, and the new grade will apply to beef from the younger animals of this grade. The names of beef grades in descending order are: Prime, Choice, Good, Standard, Commercial, and Utility.

(The continuation of this section is on page 33)



All the mixers tested were given a 50-hour life test. They were run, 15 minutes on and 15 minutes off, for 25 hours at high speed in air, and then 25 hours at low speed with the bowls filled with a material simulating the load that would be applied in the mixing of a cake batter.

Electric food mixers

A FOOD MIXER is a useful appliance in any kitchen. It is not only a great help in making a cake, even with a prepared mix, but in mashing potatoes, making frostings, and in performing many other common mixing chores.

Whether or not a stand-mounted mixer is the kind for you depends on the space you have in your kitchen. A mixer that is kept in a cabinet and out of sight is likely not to be used enough to warrant the \$30 to \$60 that you will have to pay for one. If you have a mixing center or some other space where you can keep the mixer readily available, then a stand-mounted mixer is a good choice.

A small portable mixer which costs some \$10 to \$40 less than that and can be hung on the wall or stored in a drawer may be the answer if kitchen space is pretty limited. The smaller mixers do not have as much power as the larger ones, and there will be some mixing jobs that they may not do very well. CR, however, found them satisfactory for mixing powdered milk, whipping egg whites, beating cake batter, and mashing potatoes.*

If you have decided that a stand-mounted

mixer is the kind you want, the next problem is to pick the make that most nearly meets your needs. For maximum convenience, and thus maximum use, if you have only one mixer, you will want one with a mixer head that can be removed from the stand and used as a portable mixer for some tasks. Almost all mixers nowadays are made this way.

Beaters should slip in and out easily, and a convenient ejector device is practically a must for the snap-in kind.

Speed controls should be easily reached, and the most satisfactory ones are those which can be operated by either hand. Don't demand a control that is too easy to turn on. It should be so built that it cannot possibly be turned on by an accidental touch, for the beaters may start revolving sometime when you wish that they would not. Serious kitchen accidents to children and adults have been caused in this way, for as the Underwriter's Laboratories point out, there is no way to make a mixer with its whirling blades safe against possibility of injury to the user.

Chances are that as you become accustomed to the mixer in your own home you will not need to pay too much attention to the various speed markings. Nevertheless, they should be clear

* "Portable Electric Mixers," report of a test of ten mixers, CR BULLETIN, April 1954.

and easy for you to read. You never can tell when you will need to use them if you try to make something new.

Most mixers are sold with two bowls, a large one (three- to four-quart capacity) and a small one (one to two quarts). Five of the ten mixers tested had a juicer attachment supplied as standard equipment. It is claimed this attachment is not so popular as it once was, since many housewives have taken to using frozen juices. Other accessories that are available, usually at extra cost, are meat grinders, coffee grinders, pea shellers, vegetable shredders, and blender attachments.

A number of advertisers offer kits which provide other attachments, such as a buffer for polishing a car or furniture, a sander, or a paddle for paint stirring, designed to be used with a food mixer. The use of such attachments is not recommended. Two mixer manufacturers when queried on having their particular appliances used with such accessories warned against it. One pointed out that the electric motors used for sanding and buffing were of much heavier construction and had a higher power rating than the one in his food mixer; the other simply recommended using only the attachments, such as a juice extractor, that were especially adapted for use with his particular make.

CR's tests

Consumers' Research, in testing mixers, not only

gave them the usual laboratory tests for electrical and mechanical safety and durability, but also had the appliances used for a variety of typical cookery tasks, including whipping egg whites for an angel food cake, and mixing a chocolate cake and refrigerator cookies. The tests were performed in CR's laboratory and in the laboratory kitchen of the home economics department of a near-by college. Accessories were not evaluated, because their use in the average home is likely to be limited. In a study reported in 1951, the meat grinder attachments, which are not significantly different today, did not do nearly as good a job of grinding meat as was done by the local butcher with his commercial meat grinder.

None of the mixers tested failed in the life test, from which we judge that all of them would hold up well in average home use. Bits of metal from the spindle sleeve and the ejector assembly of the *Sunbeam*, however, were deposited in the bowl during this test, caused by poor alignment of the ejector slide, a fault in assembly which might characterize some samples but not others. The *Dormeyer Power-Chef* and the *Westinghouse* both became noisy with use.

Switches and speed controls

On most mixers, the various running speeds are marked by a number along with an indication of the kind of task which the mixer might be expected to perform at each setting. Each manu-



At various speed settings, the beater speeds were measured with no load (with the beaters turning in air) and again when the beaters were turning under load in the mixing bowl.

facturer has his own system. The number of speed settings on the mixers tested ranged from 6 to 12. Too few speeds may be a disadvantage, but on the whole any number from 6 to 12 is likely to be satisfactory; in fact, on some mixers there is little difference between the speed at one speed marking and another, at the ends of the range.

The speeds of the beaters were found to range from 250 to 1040 revolutions per minute with no load. The upper limit was nearly the same for all mixers; on the other hand some of the mixers tested, the two *Dormeyers*, the two *General Electrics*, and the *Universal*, had no speeds under 400 revolutions per minute.

CR believes that the speed control (which is also the switch) should have a lock or a notch at the off position to prevent the mixer's being turned on unintentionally, with the possibility of catching the fingers in the beaters.

Beaters

Most mixers have two beaters. The *General Electric Triple-Whip* has three, which may be used separately if desired. The *KitchenAid* mixer has only one beater which revolves and is moved around inside the stationary bowl in a planetary motion. The individual beaters were inserted separately except the two on the *Hamilton Beach* which were fixed to one shaft and were therefore inserted and removed as a unit. Beaters which do not have a center rod within the beater cage are easier to clean than those which do.

All but three of the mixers tested had a beater ejector of one kind or another, a boon to the housewife who wants to be able to remove the beaters easily, even when they are covered with sticky batter. On the *Hamilton Beach* the beaters dropped out when a setscrew on front was loosened, and this arrangement was considered to be as satisfactory as an ejector. The *KitchenAid* and *Westinghouse* mixers did not have any kind of beater release or ejector.

All the mixers were held to be sufficiently stable on their stands. The *Universal* was built so that the motor head was tilted back and sideways, and a touch or jar would tend to make the head fall back into its mixing position, which was judged an unnecessary inconvenience.

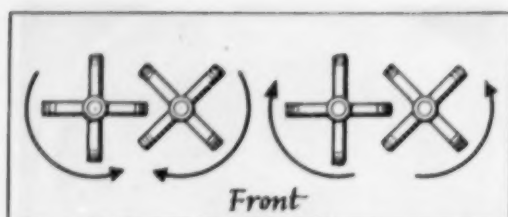
The motor head of each mixer tested could be taken from the stand and used as a portable mixer, with the exception of the *KitchenAid*. All nine of the mixers were judged reasonably convenient for this use, but some were much more uncomfortable to hold than others, when used as portable mixers. Some were also judged rather heavy. The power heads of the mixers



Every mixer tested did a better mixing job when it had some help from a rubber spatula. In each of the bowls shown, a prepared cake mix was mixed at medium speeds for two minutes. No spatula was used. With the *General Electric Triple-Whip*, a smooth creamy mixture was obtained. With the *Westinghouse*, the batter was not mixed evenly and unmixed portions stuck to the side of the bowl.

tested weighed from $3\frac{1}{4}$ to $6\frac{1}{2}$ pounds, 3 pounds or so more than portable mixers, which weigh from $1\frac{1}{2}$ to $3\frac{1}{4}$ pounds. Only two of the mixers, the *Dormeyer Mix-Maid* and the *General Electric All-Purpose*, which are sold as dual-purpose (portable and stand-mounted) mixers, had a heel rest. This is judged an important feature in a portable mixer, since with it a mixer could be tilted back so the beaters would not rest on the table surface. The *General Electric All-Purpose* mixer can be hung on the wall; the stand comes apart and can be stored separately.

Every mixer tested did a better mixing job when it had some help from a rubber spatula to bring the entire contents of the batter into contact with the beaters. Some, however, required more work than others to do this. The *Hamilton Beach* has a "Bowl Control" which, the manufacturer suggests, should be used to shift the



When the beaters turn toward each other on the side toward the user as diagrammed at the left, there is a possibility of a finger or spoon being drawn between them. Beaters rotated in the way shown at the left on the Dormeyer Power-Chef, General Electric All-Purpose, the Kenmore, and Universal mixers. On the other mixers that had two beaters, the beaters rotated away from each other on the user's side, which is a safer arrangement.

platform and the bowl on it to bring unmixed parts of a mixture into contact with the beaters.

The bowls of most mixers revolved because of the action of the beaters on the mixture. This is entirely satisfactory, except when the mixer is working on a very thin mixture which may not provide enough resistance to make the bowl turn. The *Hamilton Beach* and the *Sunbeam* mixers have a "friction button" on the bottom of the outside beater which presses against the bowl and keeps it revolving steadily on the turntable. The bowl of the *General Electric All-Purpose* mixer tested did not revolve, and it was found impossible to adjust it so that it would. Most mixers have an off-center turntable with two locations on the stand to provide for use of the small and the large bowls supplied with the mixer.

All the mixers tested were for use on a.c. or d.c. except the two *General Electric* mixers, the *Hamilton Beach*, and the *Kenmore*, which were for a.c. only. Most of the mixers tested gave an amount of radio and television interference that was considered objectionable. The *Dormeyer Power-Chef* and *Universal* mixers showed the least radio interference and the *KitchenAid* and the *Dormeyer Mix-Maid* gave least television interference. All the mixers tested but one (the *Kenmore*) passed the usual tests for electrical safety.

A. Recommended

General Electric Triple-Whip, Model M12 (General Electric Co., Bridgeport 2, Conn.) \$39.95. Price includes juicer attachment. Mixer head weighed 5½ lb. Could be used with one, two, or three beaters. Three beaters with no center rod, ejected by turning speed control beyond "off" position. Twelve speed settings ranging from 490 to 970 rpm. Both bowls were larger than those of other mixers tested: large, 15½ cups (4 qt.); small, 8 cups (2 qt.). (The average size for the

large bowls was about 13 cups, for the small ones, 6 cups.) Judged easy and convenient to use, although it was considered that the motor hung over the bowl too far for greatest convenience. Motor became hot during prolonged use.

General Electric All-Purpose, Model M15 (General Electric Co.) \$27.95. Designed specifically for use as a portable as well as a stand-mounted mixer. Mixer head weighed 3¼ lb. Two beaters with no center rod, ejected by a lever under the head. Twelve speeds from 400 to 930 rpm. One Pyrex bowl, 13¼-cup capacity. Had heel rest. Judged convenient to use, but sample tested was faulty in that the bowl had to be turned manually.

Hamilton Beach, Model H (Hamilton Beach Co., Div. of Scovill Mfg. Co., Racine, Wis.) \$43.95. Mixer head weighed 5½ lb. Two beaters guarded and connected, fastened in position and removed by turning a screw knob. Ten speeds ranging from 270 to 1000 rpm. Speed control had a notch at "off" position (desirable). Two "mix-bake-store" Pyrex bowls: 12¾-cup and 5½-cup capacity. Had a "Bowl Control" to aid in bringing all parts of mixture into contact with the beaters. Timer (bell signal), considered a desirable convenience feature. Judged convenient to use, but when the appliance was used as a portable mixer, ridges on each side of the handle were found somewhat uncomfortable.

KitchenAid, Model 3C (KitchenAid Electric Housewares Div., The Hobart Mfg. Co., Troy, Ohio) \$59.50. Mixer head could not be removed from the stand for use as a portable mixer. One heart-shaped beater, no center post. Lacked beater ejector. Some users judged it relatively difficult to insert and remove the beater. Ten speeds ranging from 220 to 960 rpm. at shaft, but beater had a planetary type of rotation. One Pyrex bowl, with 12¾-cup capacity. Judged satisfactory in use, although the bowl was considered too deep for hand mixing ingredients easily at the bottom. Lacked the convenience and versatility of some other mixers. ¶Ice cream freezer attachment was rated B. Intermediate in study reported in July 1953 BULLETIN.

Sunbeam Mixmaster, Model 11 (Sunbeam Corp., 5600 Roosevelt Rd., Chicago 50) \$47.50. Price includes juicer attachment. Mixer head weighed 5¾ lb. Two beaters with center rod, ejected by turning the handle. Ten speeds from 270 to 870 rpm. Two bowls: large, 14¾-cup capacity; small, 6¾-cup capacity. Has "Bowl-Shifter" lever which moves head into position for use with large or small bowl. Judged convenient to use.

B. Intermediate

Dormeyer Mix-Maid, Model 7700 (Dormeyer Corp., Kingsbury and Huron Sts., Chicago 10) \$29.95. Price includes juicer attachment. Mixer head weighed 4½ lb. Two beaters with center rod, ejected by lever underneath the head. Nine speeds from 640 to 910

rpm. Two bowls: large, $11\frac{3}{4}$ -cup capacity; small, 5-cup capacity; both relatively small. Had a heel rest. Judged relatively convenient to use but results in mixing test were unsatisfactory compared with other mixers, since beaters did not reach the bottom or edges of bowl and because batter climbed up the sides of the bowl. In use tests, this mixer lacked power for mixing heavy cookie mixture. The projection at the rear used for fastening the head to the stand got in the way when the appliance was used as a portable mixer.

Dormeyer Power-Chef, Model 4201 (Dormeyer Corp.) \$47.50. Price includes juicer attachment and meat grinder. Mixer head weighed $6\frac{1}{4}$ lb. (one of two heaviest tested): Two beaters with center rod, ejected by release under handle. Ten speeds from 440 to 1040 rpm. Two bowls: large, $11\frac{3}{4}$ -cup capacity; small, 5-cup capacity; both somewhat smaller than most. Weights and measure scale on mixer head was considered a useful feature. Motor head is shifted from side to side to change position for use with one bowl or the other. Judged convenient to use as a stand-mounted mixer, but when used as a portable mixer, rough edges on the handle were uncomfortable.

Kenmore, Model 116.82700 (Sears-Roebuck's Cat. No. 34-08270) \$32.95, plus postage. Mixer head weighed $5\frac{1}{2}$ lb. Two beaters with center rod, ejected by pushing plate on front of motor head. Twelve

speeds from 260 to 980 rpm. Two bowls: $14\frac{3}{4}$ -cup and $5\frac{1}{2}$ -cup capacity; cup graduations were marked on the small bowl (desirable). Judged convenient in use, although on sample tested the speed control was stiff and hard to turn. "Speed file" accessory had sharp edges and was judged inconvenient; moreover, it was hard to pull out. Leakage current, an indication of possible shock hazard, was slightly in excess of CR's tolerance.

Universal, Model EA-B6226 (Landers, Frary & Clark, New Britain, Conn.) \$47.50. Price includes juicer attachment and food chopper. Mixer head weighed $6\frac{1}{2}$ lb. (one of two heaviest). Two beaters with center rod, ejected by release on handle. Ten speeds from 440 to 1040 rpm. Two bowls: $11\frac{3}{4}$ -cup and $5\frac{3}{4}$ -cup capacity. The mixer was judged somewhat inconvenient in use since handle had rough edges and was uncomfortable, and mixer head when tilted back and sideways was relatively unstable.

Westinghouse Food Crafter, No. FM-511 (Westinghouse Electric Corp., Springfield, Mass.) \$49.95. Mixer head weighed $5\frac{1}{2}$ lb. Had two beaters with no center rod. Lacked beater ejector. Six speeds from 280 to 970 rpm. Two "mix-bake-store" Pyrex bowls: 15-cup and $6\frac{1}{2}$ -cup capacity. Judged fairly convenient for use. Became hot and vibrated excessively in use test. Considered noisy in operation.

Automobile parking dial

AN automobile parallel parking dial was tested by CR. This is a small gadget made of plastic intended to be used to facilitate parking an automobile. The "instrument" is attached to the top of the dashboard by means of a rubber suction cup and then adjusted to indicate an angle of about 30 degrees from the center line of the car. The instructions say "Pull up approximately even with the car in front of your parking place. Turning the wheels rapidly to the right as far as possible, back up until the pointer is sighted parallel with the road. Turn the wheels rapidly to the left as far as possible, as you back slowly into the space."

The gadget was tried by CR and was found to give inconsistent results in parking. Success or failure of the device depended on the distance from the car to the curb when the procedure was started, and how fast the driver turned the steering wheel. A serious disadvantage is that the device requires the driver to look at the



dashboard when he *should* be watching where he is going—for safety of car and persons.

C. Not Recommended

Auto Parallel Parking Dial (Manufacturer unknown) Sold at 79c to \$1 by various mail-order concerns dealing in gifts, novelties, etc.



TDC Prestomounts

Davidson

Emde

Garco

The manner in which corners are finished off is just as important as the other features of a mount since corners similar to those of the Davidson and Garco can cause inconvenience in handling and difficulties in use in the projector.

Ready-made mounts for 35 mm. color transparencies

MANY amateur photographers find much pleasure in taking and showing color slides, but they do not enjoy the job of mounting their transparencies between squares of glass. Some form of mounting between glass is almost essential if the transparencies are valuable, to protect them against dust, fingerprints, and scratches. An exception may be noted where an automatic slide changer is used, as, with use of this device, slides in cardboard mounts are inserted in the magazine just as they come from the processor, and do not have to be handled further. Many, however, will wish to mount at least their most-prized slides in glass.

In the long run, mounting all one's transparencies can be more expensive than buying magazines for a slide changer. Even the extra expense of about \$10 to \$15 for a changer, necessary to permit use of the slide magazines, will be returned to its owner after about 10 to 20 magazines have been bought, and thereafter a definite saving will be realized, not to speak of the extra convenience. Such magazines list from

about 75 cents to \$2 and hold 30, 36, or 40 slides. To mount the same number of slides in the least expensive mounts listed in this article would cost in the neighborhood of \$2.10, \$2.50, or \$2.80, respectively.

The photographer who wishes something better than the cardboard mounts has his choice of an all-glass mount, a metal and glass, or a plastic and glass ready-made mount. The metal or plastic mounts can be applied in much less time than the all-glass mounts, and there is less danger of breakage if one of the mounts is dropped accidentally than if an all-glass "sandwich" is chosen. Metal or plastic mounts will absorb the shock of a fall better, with less danger of breakage of glass. The use of a cardboard mount between two glass squares with the edges taped makes an assembly that is often too thick to fit properly into the slide projector or changer, unless thin glass and the proper masks are used.

Metal or plastic slide binders offer the advantages of speed in handling and easy insertion, and they do not involve use of the sticky ad-

hesive tape commonly employed with transparencies that are simply mounted between two sheets of glass.

In using most ready-made mounts, the transparencies must be removed from the cardboard mounts and placed between two sheets of glass approximately $1\frac{3}{8} \times 1\frac{1}{2}$ inches. The combination is then slipped or snapped into place and held by the metal or plastic frame. Some mounts offer much greater convenience in handling and flexibility in remounting and afford a neater finished assembly than others.

Our study of slide mounts disclosed that there was not a single brand examined which incorporated all the desirable features that one would reasonably expect to find. The *Brumberger* and *TDC Prestomounts* mounts were more difficult than normal to disassemble. The *Emde* mount, a one-piece unit, while it was the easiest and fastest to use, may often be damaged by the breaking off of one entire edge if it is re-used. Transparencies when used with *Esco* and *Kwik Klik* mounts will often require further trimming to avoid Newton's ring, and curling or buckling of the film; this is because of the relatively small dimensions of the center frames of these mounts. The same condition exists with the *Brumberger*, *Davidson*, and *TDC* mounts, but the trouble is present to a lesser degree with these.

While all the mounts included in this test could be assembled more easily and quickly than all-glass mounts, it should not be assumed that they reduce slide mounting to the task of only a moment, for it still takes a good deal of time to clean the film and glass properly, and to exclude all particles of dust and lint.

Transparencies do not last indefinitely. They always suffer some degree of deterioration in storage, especially where there is long exposure to high humidity, high temperatures, fumes, or bright light (sunlight or daylight). To extend their life to the maximum, they should be kept where it is dark, cool, and dry. Slides should not be kept in envelopes, but in a closed file or container, when out of use. If sleeves are used, they should be of *cellulose acetate*, not *cellophane*.

All mounts included in this report were made of aluminum sheet except the *Brumberger* and the center section of *Kwik Klik*, which were made of sheet steel. The mounts were competitively priced and fell within a range from about 7 cents to 10 cents each in lots of 20.

A. Recommended

Brumberger (Brumberger Sales Corp., 34 34 St., Brooklyn 32, N.Y.; Montgomery Ward's Cat. No. 67-3330) \$1.49, plus postage, for 20. Two-piece metal mount. Requires that the film be removed from its cardboard mount. More difficult to disassemble than most other makes. Well finished, rounded corners.

Emde (Emde Products, Inc., 2028 Stoner Ave., Los Angeles 25; Montgomery Ward's Cat. No. 67-3394) \$1.75, plus postage, for 20. One-piece metal mount. Does not require that film be removed from its cardboard mount. A good mount, especially with respect to ease and speed of mounting. Not practical for re-use because the edges were susceptible to breakage when folded more than once; would be a costly mount for anyone intending to re-use. Corners are squared but well finished.

TDC Prestomounts (Three Dimension Co., 3512 N. Kostner Ave., Chicago 41; Montgomery Ward's Cat. No. 67-3327) \$1.75, plus postage, for 20. Two-piece metal mount; like *Brumberger*, requires that film be removed from its cardboard mount; was relatively difficult to disassemble. Well finished, rounded corners. ¶Also available from Sears Roebuck, Cat. No. 3-6462, at \$1.85, plus postage.

B. Intermediate

Davidson Star-D (Davidson Mfg. Co., 2223 E. Ramona Blvd., West Covina, Calif.) \$1.55 for 20. Two-piece metal mount. Requires that film be removed from cardboard mount. A good, lightweight mount except that corners were not uniformly rounded or finished off smoothly.

Esco (Erie Scientific Corp., 693 Seneca St., Buffalo 10) \$1.85 for 20. Three-piece mount (2 pieces of sheet metal, 1 of fiber). Requires that film be removed from its cardboard mount. Newton's rings (multicolored areas where film comes in contact with glass) were noted unless the transparency was trimmed to fit the mount. Corners are squared but well finished.

Kwik Klik (Mansfield Industries, Inc.; Sears-Roebuck's Cat. No. 3-6432) \$1.29, plus postage, for 20. Two-piece metal mount. Requires that film be removed from its cardboard mount. Newton's rings were noted, as on *Esco*, and there was buckling of film unless the transparency was trimmed to fit the mount.

C. Not Recommended

Garco (Garco Products, Inc., New Hyde Park, N.Y.) \$1.95 for 20. Two-piece metal mount. Does not require that film be removed from its cardboard mount. Not so easy to assemble as others, and there were sharp corners and edges to catch.

Iron Fireman SelecTemp heating system

THE Iron Fireman Manufacturing Company is offering a radically new type of heat distribution system which is claimed to provide individual thermostatic control of temperature in each room of a house, and yet is available at a low initial cost and low operating cost. The *SelecTemp* system uses a conventional oil- or gas-fired boiler, which supplies steam, either directly or through manifolds, to as many $\frac{1}{4}$ -inch (inside diameter) copper tubes as there are heat transfer units (of a special kind in this case) in the house.

In place of conventional radiators or baseboard radiation, *SelecTemp* employs self-contained steam-driven-fan heat-transfer units (see Figure 1), which are recessed four inches into the walls between studs. The surface dimensions of these units for distributing warm air to the rooms are $16\frac{3}{4}$ inches high by $9\frac{1}{4}$ inches, $13\frac{5}{8}$ inches, or 18 inches wide, according to which of the three following units is chosen: *II-6*, 6000 Btu (25 sq. ft. steam radiation), \$54; *II-12*, 12,000 Btu (50 sq. ft. steam radiation), \$67; *II-18*, 18,000 Btu (75 sq. ft. steam radiation), \$80.

Steam from the boiler after passing through a very small turbine which drives a quiet blower enters a cellular convector or heat exchanger where it heats the air which is circulated out of the convector and into the room by the blower. Steam delivered to the turbine is at 5 to 8 pounds per square inch pressure. The water of condensation is returned to the boiler through $\frac{1}{8}$ -inch (inside diameter) return tubes aided by the central steam-driven or electric pump.

The heating unit in each room is controlled by a non-electric bellows-type thermostat, which regulates the steam flow to the convector and at the same time determines the speed of the circulating fan according to need for heat in the room. A further control of temperature is obtained by a bi-metal helix which operates a damper in the individual room-heating unit.

The manufacturer's claims for advantages of this method of heating center around the individually-controlled heating for each room. This would be a definite advantage in houses where

it is desired to keep the bedrooms at a lower temperature than the living quarters, or where large picture windows permit the entrance of solar heat that tends to interfere with the usual heat regulation and so makes other rooms colder. The system is helpful, too, where a fireplace is used, since with the usual heating plant, use of the fireplace tends to cut off the regular heat supply not only to the one room but to other rooms of the house (unless zone thermostats and multiple circulators are used). A further point favoring the *SelecTemp* is the ease of installing flexible $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch copper tubing as compared with pipe of larger size used for other heating systems. Installation is further simplified by the elimination of elbows and tees where the $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch copper lines connect to the feeder lines, for holes of the correct size are simply punched into the feeder line with a special tool. Into these holes the $\frac{1}{4}$ -inch and $\frac{1}{8}$ -inch pipes are quickly inserted and soldered in position. In installation, the $\frac{1}{4}$ -inch lines which carry steam at a high temperature should not run in close contact with floor beams or studding for that could in time create some degree of fire hazard. (Charring of wood may occur, followed by the possibility of spontaneous combustion, at temperatures of hot steam.)

CR's engineers were favorably impressed by three *SelecTemp* heating systems (two in new houses and one in an older house) which they inspected. Temperature regulation was found to be very good, and the noise from the blower was slight, and considered no more objectionable than that from the average forced warm-air system. It was expected that with heat distribution concentrated at small warm-air outlets, air currents might be a problem, but this was found not to be the case. All of the owners appeared to be well satisfied with their heating systems. Another owner reported that, overall, he was very well pleased with the *SelecTemp* system but that three out of 15 of his units were somewhat noisy and two of those and two others were slow to respond to changes in temperature; these units have now been replaced under the guarantee.

There is always a certain amount of risk in



Photo Courtesy Iron Fireman Mfg. Co

Figure 1—Individual room heater with grille removed.

purchasing a new appliance of any sort before sufficient time has elapsed for full reports to be obtained to determine how well the equipment stands up under actual use conditions and the "bugs" corrected. With the *SelectTemp*, one trouble was that bearings for the blower and turbine which were made of cadmium-plated steel proved unsatisfactory in use. We understand replacements for these bearings are now available, made of stainless steel.

As a check on the manufacturer's claims for low installation costs and for costs in general being a little lower than baseboard hot-water heating, an experienced heating layout engineer was asked to prepare estimates for (1) supplying and installing *SelectTemp*, and (2) supplying and installing a baseboard heating system with two separate thermostatically-controlled heating zones for the same hypothetical 8-room house. His report estimated a price of \$1650 for the *SelectTemp* against \$1300 for the baseboard system. These figures did not include boiler, burner, controls, and inside tank which would add about \$700 to each price. Prices, however, will vary, and it is best to get estimates on the various kinds of systems before reaching a decision. For example, a local dealer estimated

he could install a *SelectTemp* system complete in a typical 8-room house for about \$1900 or about \$450 less than our heating consultant estimated for the system with boiler, burner, controls, and tank. It should be pointed out that the *SelectTemp* heating units will very likely call for some maintenance, but the distributor gives a one-year guarantee, and if a given convector unit does not operate properly, it can be quickly removed and replaced, and the defective unit sent back to the factory for repairs. The consumer can likely expect more trouble with the several mechanical controls and turbine than with the ordinary simple radiator or convector, but that is a price that perhaps may need to be paid for more precise and flexible regulation.

To sum up, it can be said that the *Iron Fireman SelectTemp* heating system seems to us to be well worth investigating by a householder planning a heating system, for either new or old construction, and should be in the same total-price range as a modern baseboard-convector system. CR will tentatively rate the system *B. Intermediate* until experience can be obtained in the field on systems that have been in use for two or three heating seasons.



The new, big outboard motors

THERE WAS A TIME when dad used to take off alone for a week end or even a month's vacation with his outboard under his arm, but those times are changing and perhaps have gone forever. Nowadays everyone in the family goes, along with that new 15-foot runabout which is needed to accommodate them. The old 5-horsepower outboard, too, was found wanting and turned in on a new 25-horsepower job with electric starting.

This year dad expects new demands from the family, for bright colors are stressed in the new model outboards, and most manufacturers have upped their horsepower ratings greatly. Actually there is coming to be a startling similarity in the selling practices of the automotive and outboard motor industries. Indeed, the pattern is even carrying over into the advertising, as the description of an outboard advertisement quoted from the New York Herald Tribune shows:

"tilt-a-matic glide ride, dura-drive, vibra-free suspension, elect-o-matic starting, tip-a-lever control system, port-a-grip handles, tend-a-matic fuel tank, twist-grip throttle and NATURAL sound." If the latter claim presages a real trend, perhaps some day the testing of outboard motors will be the province of audio engineers rather than men with automotive training and experience.

The latest model outboards are something of which the manufacturers can be justly proud, even though basic changes have not been made to the extent the advertising would have one believe. The 1956 *Mercury Mark 55* (40 horsepower), for example, is basically the same engine as their 1950 25-horsepower model. The changes and additions which are incorporated in the 1956 model are merely of a kind to improve performance (for example, an increase in compression ratio). There are also changes to make the

motor safer, more convenient to use, and more dependable in operation.

The increasing demand for larger and more commodious family boats coupled with the increasing popularity of water skiing, cruising, off-shore or deep-water fishing, and other water sports have created a real demand for these more powerful outboard motors. For 1956, the motors in the expanding 30-horsepower class have less weight per horsepower developed and cost less per horsepower than in previous years. Prospective purchasers should have it in mind, however, that increased horsepower may not greatly affect top speed performance. Rather, the effect of the added power is likely to be noticed chiefly in increased acceleration and improved pulling power, and if those are not important to you, you can get along very well with a motor of lower horsepower.

There are practical limits to the size and weight of an outboard, since the term connotes portability. The motors tested are in a weight class which is beyond the "portable" limit for one person, and two or more persons will be required to carry any one of them.

Much of the advertising for the 1956 models stresses the smooth, quiet operation of the motors. It is true that the incorporation of shock-mounts has reduced the tendency for motor vibration to be transmitted to the hull (which acts as a sounding board), but outboard motors still make a lot of noise. Satisfactory hearing of casual conversation in a boat that is under way is still something to look forward to. The latest models, however, do show improvement in this respect.

As with an automobile engine, the power of an outboard motor increases as its speed (revolutions per minute) is increased, up to a point.

For this reason, a speed boat uses a propeller that advances a considerable distance through the water on each revolution, while a cruiser needs a propeller with less pitch, that is, one which advances only a short distance per revolution. In both cases the motor should turn at about the same speed so that it will develop its rated maximum horsepower. It is possible, however, by proper choice of propeller and other equipment to use the same motor on a variety of types of boats.

CR's tests

CR's tests were made on a fresh-water lake with each motor mounted in turn on a 14-foot (64-inch beam) *Penn Yan "Striptite"* boat. This hull was of such size that it would be considered relatively "fast" for the size of motor tested.

Each motor was subjected to a series of tests similar to those used when testing the motors of



Scott-Atwater Ball-a-matic



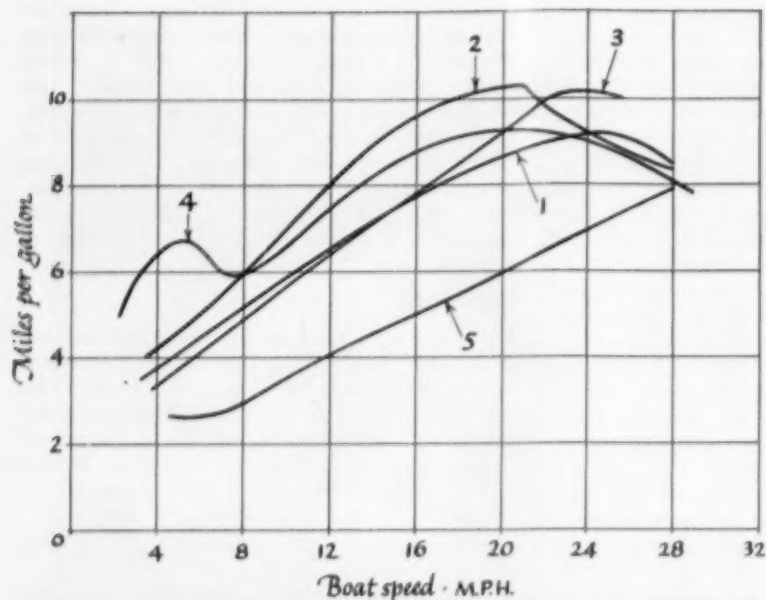
Evinrude, Big Twin Electric 30



Johnson Sea Horse 30



Mercury Thunderbolt, Mark 30E



Identification of curves: 1—Evinrude Big Twin Electric 30; 2—Johnson Sea Horse, 30 horsepower; 3—Johnson Sea Horse, 25 horsepower; 4—Mercury Thunderbolt, Mark 30E; 5—Scott-Atwater Bail-a-matic.

smaller horsepower in 1952. Briefly, a series of runs was made with a two-man crew at several different boat speeds, between 4 miles per hour and the top speed attainable. Fuel consumption and time were obtained for each run, as well, and the results of these determinations were plotted for each motor. These graphs gave a reliable picture of the performance of each motor over its usable speed range.

Pull tests using a sensitive dynamometer were also carried out. The amount of pull exerted by any particular motor is not necessarily dependent upon its horsepower, but is determined rather by the characteristics of the propeller (diameter and pitch of blades), gear ratio between motor and propeller, and the torque characteristic of the motor. In a previous test, for example, a motor which showed very good pulling power did not show up well in the high-speed runs. The *Scott-Atwater* reported on in the present BULLETIN showed a similar characteristic.

The motors selected for this year's tests were chosen as brands which would likely be of most interest to our subscribers. The 30 to 33 horsepower range was picked because it was the unanimous opinion of the manufacturers and several editors in the outdoor sports field that this would be the most popular size in 1956. All motors tested were supplied with separate fuel tanks of approximately 6 gallons capacity.

Note: It was planned that a *Champion*

Tandem 33-horsepower combination model would also be included in this report. Unfortunately, it was not delivered in time to permit the tests to be completed.

A. Recommended

Evinrude, Big Twin Electric 30 (Evinrude Motors, Milwaukee 16) \$562. Rated 30 hp. at 4500 rpm. Weight, 129 lb. 2 cylinders. $2\frac{3}{8}$ -in. bore, $2\frac{3}{4}$ -in. stroke. Piston displacement, 35.7 cu. in. Propeller, 3-blade, $10\frac{3}{8}$ -in. diameter, $12\frac{1}{2}$ -in. pitch. Electric starting on model tested (optional at \$92). Maximum boat speed in test, 28 m.p.h. Propeller "slip," relatively low at all speeds. "Tug test" (static pull), 410 lb., whence with the propeller furnished better suited to heavier—and slower—boats than are the *Scott-Atwater* and the *Mercury*. Fuel consumption, noticeably greater than for the *Johnson* in low and moderate speed ranges. While claimed to offer greater fuel economy at cruising speeds, the *Johnson* and *Mercury* motors were found to be as good or slightly better in this respect. Regular grade engine oil and gasoline recommended, an advantage in respect to ready availability and economy. While this motor is essentially similar to the *Johnson*, there was a noticeable difference between the two in regard to fuel economy; the *Evinrude* was less economical in use of fuel except near maximum boat speed.

Johnson Sea Horse 30 (Johnson Motors, Waukegan Ill.) \$462. Rated 30 hp. at 4500 rpm. Weight, 119 lb. 2 cylinders. $2\frac{3}{8}$ -in. bore, $2\frac{3}{4}$ -in. stroke. Piston displacement, 35.7 cu. in. Propeller, 3-blade, $10\frac{3}{8}$ -in. diameter, $12\frac{1}{2}$ -in. pitch. Motor was only one tested not equipped with electric starting. Maximum boat

TABLE SHOWING SOME OF THE RESULTS OF TESTS ON OUTBOARD MOTORS

Outboard motor	Maximum rated hp. at stated rpm.	Top speed, with two crew members			Cruising speed, 10 m.p.h.			Maximum static pull (dynamometer)
		Miles per hour*	Fuel consumption, gal. per hr.	Miles per gal. of fuel	Motor rpm.	Fuel consumption, gal. per hr.	Miles per gal. of fuel	lb. at stated ft. per min. of propeller advance (calc.)
Evinrude	30 at 4500	28	3.4	8.5	2400	1.7	5.8	410 at 1700
Johnson†	30 at 4500	28	3.4	8.3	2400	1.4	7.0	410 at 1700
Mercury	30 at 5400	29	3.7	7.8	3400	1.5	6.6	310 at 1550
Scott-Atwater	33 at 4200	28	3.6	7.9	2560	2.8	3.5	350 at 1950

* Obtained with test hull and at rated motor speed and maximum horsepower.

† A 1953 model 25-horsepower Johnson gave the following results under the conditions of test: maximum speed, 25 miles per hour; tug (pull), 38 pounds.

speed in test, 28 m.p.h. Propeller "slip," relatively low at all speeds. "Tug test" (static pull), 410 lb. Fuel consumption, lower than for other motors tested in moderate speed ranges. For other comments, see listing of *Evinrude Big Twin*.

Mercury Thunderbolt, Mark 30E (Kiekhaefer Corp., Beaver Dam, Wis.) \$486. Rated 30 hp. at 5400 rpm. Weight, 128 lb. 4 cylinders. 2-7/64-in. bore, 2 3/8-in. stroke. Piston displacement, 29.7 cu. in. Propeller, 2-blade, 9.6-in. diameter, 10.6-in. pitch. 12-volt ignition system. Electric starting on model tested, together with provision to maintain battery charge by flywheel a-c generator and rectifier (optional at \$125). Maximum boat speed attained in test, 29 m.p.h. Propeller "slip," average at moderate to high boat speeds. "Tug test," 310 lb. pull (comparatively low). Top speed, highest of group by a slight margin (somewhat surprising, since the piston displacement of the *Mercury* is substantially less than that of the other three; motor speed was faster, and the motor was equipped with a good "speed" propeller). Fuel consumption per mile at moderate speed, comparatively good. Motor was

noticeably "smoother" in operation than others tested particularly at slow speeds. A mixture of a white gasoline and the manufacturer's own brand of oil are recommended. This constitutes an inherently expensive fuel because of the present high price of white gasoline.

Scott-Atwater Ball-a-matic (Scott-Atwater Mfg. Co., Inc., Minneapolis 13) \$470. Rated 33 hp. at 4200 rpm. Weight, 141 lb. 2 cylinders. 3 1/8-in. bore, 2 3/8-in. stroke. Piston displacement, 42.2 cu. in. Propeller, 2-blade, 10-in. diameter, 14-in. pitch. Electric starting optional (\$90 extra). Maximum speed, 28 m.p.h. Propeller "slip," higher than for other motors at moderate to high boat speeds. "Tug test," about 350 lb. pull. Fuel consumption, much higher than other motors tested in moderate to high speed ranges; at high speed, about the same as the others. While this may have been due in part to the propeller being wrong for the boat, the plotted curve of fuel consumption vs. boat speed indicated there was possibly room for improvement in the fuel-control system. The *Scott-Atwater* motor was distinctly heavier than the others tested.

Corrections and Emendations to Consumers' Research Monthly Bulletins

Spinnet Pianos
Page 20
Aug. '55 Bulletin

The listing of the *Baldwin Acrosonic Style 929* should read *Baldwin Acrosonic, 40-inch models*. The Baldwin Company is now making new styles in the 40-inch size pianos priced at \$900 to \$1000. These have replaced the *Style 929*.

Winter Sport
Shirts
Page 19
Dec. '55 Bulletin

The *National "Bristol" 2303* sport shirt tested was viscose rayon with a small percentage of acetate, and was not cotton as was reported.

Dictation Equip-
ment Table
Page 26
Mar. '56 Bulletin

The \$332 price listed for the *SoundScriber* transcribing machine includes the foot control as well as the listening device.

Dictation Equip-
ment Table
Page 22
Apr. '56 Bulletin

The \$423 price listed for *Dictaphone* combination machine includes the foot control as well as the microphone and headset.

Carbon tetrachloride poisoning

Dr. Wilber J. Menke, Jr., medical officer of the California State Department of Public Health, has published an important paper regarding the dangers of carbon tetrachloride and related chemical substances commonly used as solvents. A false sense of security, he notes, has been fostered by the belief that the *non-flammability* of carbon tetrachloride means that it is *safe*, and thus a caution label is likely to be disregarded.

Carbon tetrachloride is a clear, colorless, liquid, much heavier than water; it has an aromatic odor, which many find not unpleasant. Its strong solvent qualities towards fats, oils, and greases have given it wide application in the home and in industry. As many as 35 trade names have been used for liquids composed mainly of carbon tetrachloride, and many or most of these have failed to indicate the composition of the material or mixture, or to indicate its toxicity. Carbon tetrachloride is a powerful poison and it may be present in dangerous quantities in the air when it cannot be detected by odor.

The ultimate consumer should assume that any cleaning solvent offered in the grocery store, drugstore, or the chain store is likely to be combustible or explosive; that if it is not in that category, it is toxic and to a dangerous degree, under the normal conditions of use in the home.

Brief exposure to high concentrations of carbon tetrachloride vapor, which may easily occur during the spot-cleaning of a garment or the cleaning of a machine part, may cause acute poisoning, anesthesia, or even death. With lower concentrations and frequent, repeated exposures, such as might occur in cleaning of a rug or a garment, there may be headache, mental confusion, depression, nausea, vomiting, loss of coordination and sense of balance, and visual disturbances.

A vigorous rug-cleaning job by the housewife in the living room of her home may produce a vapor concentration sufficient to cause death.

Bernard D. Bloomfield, of the State Department of Health at Lansing, Michigan, is emphatic on the dangers of using fire extinguishers containing carbon tetrachloride, which, in the presence of heat or flame, can be broken down to form various toxic chlorine compounds and the

Carbon tetrachloride has been injuring and killing people for many years, and CR has warned of the dangers in use of this material, beginning in March 1932. That was at a time when there was little recognition of the dangers in home and factory use of this widely-sold solvent and cleaner. Recently, many cases of death and injury have come to public notice in which this popular cleaning and spotting agent has been involved. Thus an Associated Press dispatch of July 31, 1955, reports the death of a five-year-old boy overcome by a carbon tetrachloride cleaning fluid used in cleaning the upholstery in his father's car. A few days earlier, the famous Margo Jones, founder and managing director of Dallas' Repertory Theater, died from acute kidney failure caused by inhalation of the fumes of carbon tetrachloride which had been used to clean spilled paint from rugs in her apartment.

deadly war gas phosgene. This gas has the property of being able to cause death after a few hours' time, an interval during which symptoms of injury may not even be observed.

Globe or grenade extinguishers, which are very popular with door-to-door salesmen, have been grossly misrepresented as containing a pure and harmless liquid, with the public being "victimized by subtle innuendo and outright falsehoods." Six firemen required hospitalization after fighting a fire in a basement space containing seven pint-sized grenade extinguishers. Three children lost their lives in a similar way in a trailer with the same type of extinguisher, which, as Mr. Bloomfield points out, "just don't put out fires."* One competent fire protection authority decided that it might be better to permit a fire to continue burning than to use a carbon tetrachloride extinguisher to put it out.

"Carbon tet" and related substances are even regarded as having potentialities for future causation of cancer, on account of their effects on

* Copies of Mr. Bloomfield's paper can be had by writing to the Michigan Department of Health, Lansing 4, attention of Bernard D. Bloomfield.

the liver and internal organs of the body which would interfere with the ability of such organs to deal with cancer-causing substances which reach the body through food and in other ways.

Dr. Menke, already quoted, wrote "Sooner or later, the individual will experience irreparable kidney and liver damage from these toxic exposures." He emphasized the differences in susceptibility between individuals, and the special susceptibility to the poisoning of those who use wines and liquors. Obese persons are also especially likely to be injured.

Other persons likely to be specially affected by carbon tetrachloride are those with high blood pressure and those who are undernourished.

Not long ago a chief electrician on a vessel died from poisoning by carbon tetrachloride which he had inhaled while cleaning a small piece of machinery in a confined space. This man was aware of the dangers in the use of carbon tetrachloride, but thought that he could handle it safely. In another instance, a man died from the effect of cleaning a rug in his home using carbon tetrachloride which he had taken home in a gallon bottle from his workplace, a dry-cleaning plant. Though he was familiar with carbon tetrachloride from years of use of it at his regular work, he applied it to a carpet in his home under conditions of extreme hazard.

Some steamship companies have become so conscious of the dangers that they have taken extreme measures to prevent use of the chlorinated solvents by their employees, and a large power company has prohibited use of carbon tetrachloride extinguishers in its plants as a result of its experience with instances in which its employees have suffered injury from the vapor.

Small children are in special danger from carbon tetrachloride because its vapor sinks to the floor, and heavy concentrations of the vapor at the child's breathing level can cause serious injury in less than one-half hour. Evaporation of a single tablespoon of carbon tetrachloride in an unventilated 10 x 10 x 10 room will produce a potentially dangerous concentration. A homemaker using carbon tetrachloride from time to time in her home may so damage her kidneys that she becomes a potential victim for toxemia during her next pregnancy. Solvents are used in various hobbies, including jewelry making, printing, refinishing furniture, home repairs, etc., and such hobbies are likely to be pursued in basements, attics, storage rooms, or other poorly-ventilated places.

A paper on Toxic Hazards in Hobbies, by Marion Gleason of the University of Rochester, appeared in the medical journal, *The Practitioner*, for June 1954, and arts and crafts uses of carbon tetrachloride received considerable attention in her paper. Teachers of these and related subjects in schools and colleges would do well to acquaint themselves with the many ways in which this dangerous chlorinated hydrocarbon is used; for example, in the killing of butterflies and beetles, watermark detection on stamps, and in photography, to clean film.

Editors of popular magazines very commonly give very bad advice. Thus, a recent article suggested that tools should be coated to protect against rust with a thin film of paste wax or paraffin dissolved in carbon tetrachloride. Obviously the dissolving and the use of such a material will be fraught with danger to the hobbyist. A similar recipe was given in a publicity release from a large manufacturing corporation. There is a general lack of information on these matters among editors of journals written both for commercial audiences and for the general public, and it is suggested that managing editors should bring to the attention of their whole editorial staffs the possibility that those thoughtlessly recommending the use of one of the many toxic solvents and cleansers may cause great injury, even death, to some of their readers.

An illustration of the extent to which these chlorinated hydrocarbons are used in various unexpected sorts of household specialties will be found in a new product intended to be applied to kitchen utensils and all metal, enamel, and glass surfaces, to keep food from sticking, which contains 95 percent of chlorinated solvent, consisting of about half-and-half mixture of methylene and ethylene dichlorides (these are substances of a nature and toxicity somewhat comparable to carbon tetrachloride).

If one spot-cleans a dress, it should be done in a well-ventilated room or outdoors, with care to remain on the windward side of the work, and the dress should be hung outdoors, well away from the house, until it dries. In use of any solvent, the hands should be protected with gloves made of synthetic rubber (neoprene), which is resistant to the action of solvents. Sometimes invalids are subjected to a dry hair shampoo using carbon tetrachloride or a similar solvent; this can be dangerous both to the invalid and to the person in attendance. Carbon tetrachloride is still (at least until very recently) used as a hair dryer, yet, according to a Food and Drug Administration official, its use in this way could cause the death of a person in a small,

poorly-ventilated room. Some years ago "carbon tet" was a major ingredient in a product for polishing silver, and, of course, in applying silver polish, the user would be exposed to a vapor of high concentration. In spite of this, the manufacturer included no poison warning and even claimed that the product did not contain anything injurious or harmful, which was about as far from the truth as an advertising claim could be.

A similar problem arises in the use of the volatile aromatic liquids commonly used for cleaning type on typewriters in offices. CR has not seen specific warnings of the hazard on any of the bottles containing this class of material. One typical product of this kind that was analyzed proved to be 100 percent carbon tetrachloride; another was 60 percent carbon tetrachloride, with the remaining 40 percent a petroleum solvent like benzene or naphtha.

There are other solvents which are less hazardous than carbon tetrachloride, but unfortunately those are not widely sold for consumer use. Two are perchloroethylene and trichloroethylene, but they also require care in use. Acetylene tetrachloride (or tetrachloroethane) and benzol (or benzene) are even more dangerous than carbon tetrachloride, and neither of these should ever be used in the home (nor benzene, which is related to gasoline, because of its extreme flammability and explosion hazard).

Solvents capable of causing poisoning are present in many common liquid and paste preparations, and with the use of one or more of these, without knowledge of their ingredients, there may be multiple exposures to chlorinated solvents in the carbon tetrachloride family or materials which are considerably worse. Among common substances containing such harmful solvents are: quick-drying lacquer, paint thinner, paint and varnish removers, certain metal polishes, rubber cement, fire-extinguishing and dry-cleaning fluids, insecticides, dry hair shampoos, fumigants, liquids used in cleaning of the type on typewriters; also certain rug-cleaning preparations, including some that are meant to be applied as a powder and then removed with the vacuum cleaner. All such materials, unless their composition is positively known to be safe, should be used only in well-ventilated spaces or out of doors, and one must avoid, with the utmost care, any unnecessary breathing of their vapors. Cloths or mops wet with any volatile solvent should invariably be dried out

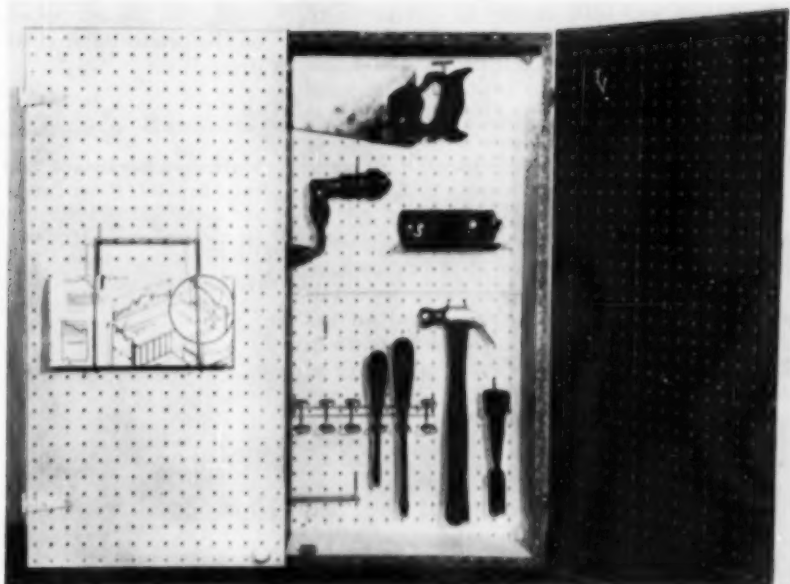
of doors; if the solvent gets on clothing that is being worn, the clothing should be removed at once and the skin washed with soap and water. Some persons might be gravely affected by inhaling amounts of the vapors that would not be at all troublesome to other persons.

A very popular household cleaning fluid containing carbon tetrachloride now bears the label: **"CONTAINS CARBON TETRACHLORIDE. DANGER! Hazardous vapor and liquid. May be fatal if inhaled or swallowed. Do not take internally; do not breathe vapor. Use only with adequate ventilation. Avoid prolonged or repeated contact with skin."**

This labeling is specified by public authorities in some cities. In 1952 it was adopted by New York City's Department of Health for its sanitary code, and should be a requirement of other large cities and of states that have the necessary regulatory authority. Such labeling gives the consumer a considerable safeguard that had hitherto been lacking. On the other hand, it does not go far enough: in the first place, because the lettering on the particular product just referred to is too small and is printed in light-face type; second, because it does not warn against the dangers of contact with considerable areas of the skin, whether or not such contact is "prolonged or repeated." It is interesting to note that one manufacturer of a carbon tetrachloride cleaning solvent recommended it for removing tar and adhesive tape, directions which would be dangerous to follow, since a great deal of the vapor might be breathed at the same time the substance was entering the body through a considerable area of the skin. According to one authority, even five minutes of exposure to carbon tetrachloride vapors is enough to cause severe symptoms, and death may occur within two hours. Surprisingly enough a pharmaceutical journal published as a formula for a non-flammable remover for adhesive tape, a mixture containing about 45 percent of carbon tetrachloride!

Another weakness of the labeling just mentioned is that few consumers would know what was meant by "adequate" ventilation. A room with a door or window open will not ordinarily be adequately ventilated, but if there were two or three doors or windows open, and a breeze blowing, a person working in a part of the room where there was a brisk current of air would be reasonably safeguarded if the working period was not long.

A tool cabinet kit



The consumer will very often find an advertisement of a device or piece of furniture available in kit form which he is supposed to be able to put together at home, in a few minutes; this, he assumes, will save him a lot of money. Such advertising warrants close examination, and it will be wise to see that you can send the item back for refund of your money, with no questions asked, if you are not satisfied.

Many of those build-them-yourself items and kits, including outdoor and indoor furniture, storage cabinets, workbenches, boats, telescope lens sets, mowers, etc., will be found upon completion to be ineffective, unsatisfactory, or deficient in one or more important characteristics.

The item described in the accompanying brief article is an example of an article that was attractive in the advertising, but was found un-

satisfactory in a number of respects. The purchaser would have to do a little designing and extra work of his own, to make a fully adequate piece of equipment from such an assembly.

Usually to return a home-assembled item for refund is a lot of trouble, and there is no certainty of obtaining a refund. Thus, in a good many cases, the customer will keep the appliance or device rather than bother to find the packing box and go to the trouble of arranging for shipment by parcel post or express.

Caution is the watchword in buying things that are to be assembled at home, especially when one is buying from an advertisement. To be really safe, you should see the finished article if possible, to be sure that in appearance and workmanship it will correspond to your ideas of good design and workmanship.

DO-IT-YOURSELF handymen who don't like to do everything themselves may find a kit-form perforated-hardboard tool cabinet for wall mounting a convenient place to store their tools. The cabinet listed below can be put together by anyone who can drive a nail. When assembled, it is 6 inches deep and 32 inches high and wide. The advertisement's claim of 20 square feet of hanging space seems greatly exaggerated, as 20 square feet would include the

inner face of the back and both the inside and the outside of the front doors. It's unlikely that the whole 20 square feet would be used, or could be, effectively, unless tools were small and light, for too many tools hung on the doors would put a heavy strain on the rather flimsy material which the doors are made of ($\frac{1}{8}$ -inch-thick perforated hardboard).

The kit for the cabinet alone cost \$9.95 and included all the necessary hinges, door catches,

nails, screws, and bolts as well as four pieces of perforated hardboard, and four 3/4-inch-thick artificial or composition boards for the sides. The 13-piece hook set, for which \$2 additional was charged, included six small plain hooks and one each of seven other fancier ones. Hooks of this kind may be purchased separately in some hardware and department stores.

It took about an hour to put the kit together. If the do-it-yourselfer knows well how to use the tools that he is going to store in the cabinet, he can design his own, make a list of the materials he needs, then buy them at the local lumber yard, and perhaps save as much as \$4 or \$5 in doing so. It may take him an extra hour or so to make the cabinet in this way, but he can make it to the size and shape he needs, and use a

strong rim around the edges of the doors, which on the product tested were definitely below par in rigidity.

C. Not Recommended

Perforated Hardboard Tool Chest (Port Hill Products Corp., 127 River Drive, Passaic, N.J.; distributed and advertised by a New York department store) \$9.95 for the tool cabinet, plus \$2 for a 13-piece hook set (plus shipping charges). The kit can be assembled easily and provides usable storage space for light tools. The materials may be purchased separately at \$4 or \$5 less than in kit form. We suggest that anyone who may decide to buy the kit should be prepared to stiffen the doors by suitable wood strips along their perimeters if he plans to hang many tools or a few heavy tools on them.

Brief Cumulative Index of Previous 1956 Consumers' Research Bulletins

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						Wiring, electrical	Feb.	4	

*Indicates that a discussion of a product or products by brand name is included.

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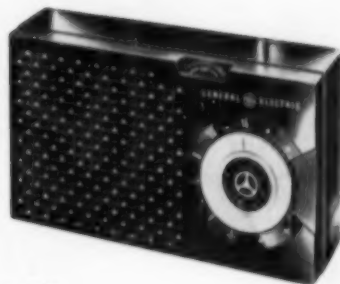
Portable radios using transistors



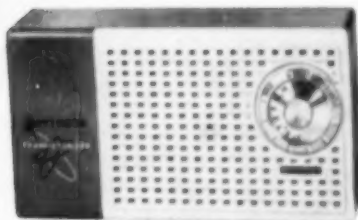
The Emerson 842, a transistor set of conventional portable-radio size.

THE TRANSISTOR, that tiny infant of the electronics industry, is rapidly attaining maturity. The transistor is the new device which is replacing the vacuum tube in many electronic, radio, and TV applications. The first commercial use of transistors, so far as ultimate consumers were concerned, was in the amplifiers of hearing aids, where compactness is particularly important. As the design and manufacturing procedures improved, the transistor was made available for use in more and more types of circuits. Increased production also lowered the price to a point where comparatively economical radios could be produced with circuits designed around several types of transistors.

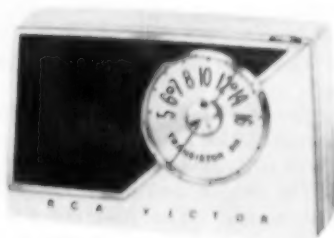
The chief advantages of transistors are small size, long life, and *very low power requirements*. It is the small amount of power taken from the circuit that has made transistors ideally suited for use in portable radios. In a portable transistor radio, the batteries are far less expensive and last much longer than those in portable radios with vacuum tubes. The reduction in size of the power supplies in the sets and the small physical size of the transistors (see Figure 1) have all contributed to the evolution of a small personal or pocket-type transistor radio that works fairly well. One disadvantage of the reduced size has been in the use of tiny ($2\frac{1}{2}$ inch) loud-speakers with their necessarily poor



General Electric 675



Raytheon T-100



RCA Victor 7BT9

These three are pocket- or personal-size radios.

response. The quality and volume of sound output is poor by comparison with the larger conventional vacuum-tube portable radios—though those have pretty poor audio quality, themselves. The ad-writers claim that transistors are new and therefore better; this is not the whole truth. The fact that something is new to an art does not necessarily mean that it is better than the product that it has succeeded. It may often be better in some one or two respects, but less desirable in others. In its present

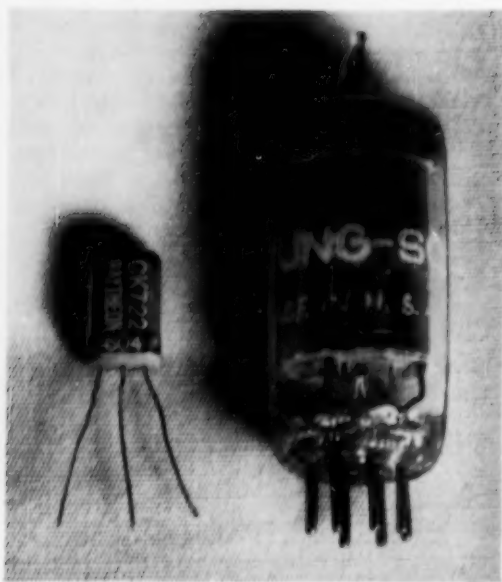


Figure 1—Comparative size of a transistor (left) and the vacuum tube which it is replacing in much modern electronic equipment where compactness is of great importance as in portable radios and hearing aids.

form, the transistor radio offers long battery life at low cost per hour of use for batteries, and portability, but the audio quality is poor. Besides, the transistors are usually responsible for a good deal of background hiss or noise. Very possibly this shortcoming will be improved upon in time.

The transistor lends itself to so-called printed circuit construction, and two of the sets tested (*RCA* and *GE*) used this manufacturing technique. The others used metal chassis and conventional wiring. The *Emerson 842* with its larger speaker had the highest output for a transistor radio in which the amount of distortion was at a tolerable level. A good general rule is that a transistor pocket radio may provide acceptable radio service if the small size and lower battery cost outweigh the lower initial cost and better performance of the conventional vacuum-tube portable receiver.

The radios included in *CR's* test were battery-powered portable radios using transistors throughout instead of vacuum tubes. The *Emerson 842* was conventional in appearance in that it had a fairly large cabinet. The others were of the personal or pocket size. All had two controls—on-off-volume and tuning. All had the super-heterodyne type of circuit.

Because of the low power audio available from the small receivers, it was judged that these sets would be played at near maximum level most of the time. Therefore, maximum watts output and distortion at that level are given in all listings.

A. Recommended

Emerson 842 (*Emerson Radio & Phono. Corp., N.Y.C.*) \$58. Case of cowhide. Over-all size, $9\frac{1}{2}$ in. wide, $7\frac{1}{4}$ in. high, $3\frac{3}{4}$ in. deep. Weight with batteries, $4\frac{3}{4}$ lb. Used 6 transistors, 1 diode detector. A set of 2 9-volt batteries costs \$3.30. Battery life judged good (about 0.2c per hour of operation). Sensitivity, very good. Relative selectivity, good. Transistor background hiss was evident in sound output. Tonal quality from $3\frac{1}{2}$ -in. permanent-magnet speaker judged about average for a portable. Power output, maximum, 0.08 watt (about average), with an average amount of distortion. Set was of conventional (rather than printed circuit) Chassis construction. Batteries could be replaced conveniently. [†]Newer Model 855 at the same price was not tested, but appears similar. **2**

B. Intermediate

General Electric, Model 675 (*General Electric Co., Syracuse*) \$49.95. Case of black plastic. Over-all size, $5\frac{5}{8}$ in. wide, $3\frac{1}{4}$ in. high, $1\frac{1}{2}$ in. deep. Weight with battery, 13 oz. Uses 5 transistors. Used a 13.5-volt battery which costs \$1.25. Battery life judged good (about 0.7c per hour of operation). Sensitivity, good. Relative selectivity, poor. There were many spurious responses at various points on the dial which exhibited themselves as whistles or beat signals. Transistor background hiss was evident in sound output. Tonal quality from $2\frac{1}{2}$ -in. permanent-magnet speaker judged good for a portable receiver. Power output, maximum, 0.05 watt (low), with low distortion. Chassis was of printed-circuit-type construction, and the transistors were soldered in place (which would make replacement difficult). Battery replacement judged convenient, but entire chassis is exposed when the back of the set is off, and could be subject to damage during battery replacement (see Figure 2). **2**

Raytheon T-100 (*Raytheon Mfg. Co., Chicago 39*) \$49.95. Case of plastic. Over-all size, $6\frac{1}{4}$ in. long, $3\frac{1}{2}$ in. high, $1\frac{3}{4}$ in. deep. Weight with battery, $1\frac{1}{4}$ lb. Used 4 transistors and 1 crystal detector. Used a 9-volt battery which costs \$1.70. Battery life judged good (1.7c per hour of operation). Sensitivity, good. Relative selectivity, poor. Exhibited spurious responses (see *General Electric 675*). Tonal quality from $2\frac{1}{2}$ -in. speaker judged good. Transistor background hiss was noticeable in sound output. Power output, maximum, 0.05 watt (low), and had high distortion at this power output. Chassis was of conventional type. Battery replacement judged convenient, and parts were protected from harm during this operation (see comments on *General Electric 675*). **2**

Figure 2—An example of how, on some transistor radios, the chassis is exposed when the battery is to be changed.



RCA Victor, Model 7BT9 (Radio Corp. of America, RCA Victor Div., Camden, N.J.) \$65. Case made of gray plastic. Over-all size, 5½ in. long, 3½ in. high, 1¾ in. deep. Weight with battery, 13 oz. Uses 6 transistors and 1 crystal detector. Used a 9-volt battery which costs \$1.35. Battery life judged good (2.7c per hour of operation). Sensitivity, good. Relative selectivity, good. Tonal quality from 2½-in. speaker judged fair. Power output, maximum, 0.07 watt, with high distortion at this power level. Transistor background noise was noticeable. Chassis of printed-circuit type. Battery replacement judged convenient,

but whole chassis was exposed when back was off cabinet (see comments under *General Electric 675*). 3

CR's tests on the following transistor radio were reported in the July 1955 CONSUMERS' RESEARCH BULLETIN.

B. Intermediate

Regency, Model TR-1 (Regency Div., I.D.E.A. Inc., 7900 Pendleton Pike, Indianapolis 26) \$49.95, plus \$1.35 for battery. 3 x 5 x 1¼ in.; 11 oz., with battery. Low sound output, poor tonal quality. 2

Booklet on resuscitation

AN IMPORTANT pocket-size booklet on *Resuscitation* is available from the American Gas Association. This deals with the back pressure-arm lift method for use in gas asphyxia, electric shock, and drowning. The method is now the one most highly recommended by competent authorities. (It was first described by Holger Nielsen and is now taking the place of the Prone Pressure Method which has been standard in the U.S. for many years.) Copies of this 21-page, illustrated pamphlet will be sent those who send 15 cents a copy to the American Gas Association at 420 Lexington Ave., New York 17. (Information on quantity price on orders of 10 or more will be given to those who send their

inquiries to the American Gas Association.) The method given is authoritative and is that adopted by a number of national and international agencies including the American Medical Association, American National Red Cross, Edison Electric Institute, National Safety Council, Army, Navy, and Air Forces, U. S. Public Health Service, and other organizations. The booklet also includes discussions of two other methods of artificial respiration, the Hip-Lift—Back-Pressure and the Arm-Lift—Chest-Pressure methods, which can be used in certain cases where the Back-Pressure—Arm-Lift method cannot be applied on account of the nature of injuries received by the injured person.

Today's color film

Choice of flash bulbs and filters

BEFORE THE ADVENT of the new fast color films that work well with shorter exposures or smaller stop openings, it was recommended that if a single type of color film must be used for both indoor and outdoor exposures, Type A indoor film should be used. This film, which was balanced to give the best color rendition with photoflood lamps, required the use of a *Wratten 85* filter, when it was to be used in daylight, and a *Wratten 81C*, when to be used with all flash lamps except SM or SF. Type A film has now been discontinued and is replaced by Type F indoor film which is color-balanced for clear flash lamps. Kodak's explanation for this change in their color film is that as flash lamps are now the most popular sources of artificial light, particularly among amateurs, the Type F, which is balanced for clear flash lamps, is a more suitable film than the old Type A, which was balanced for photoflood (tungsten) lamps.

Photographers who work extensively with photoflood lights rather than flash can purchase

Kodachrome Professional Type A film, which is identical to the discontinued *Type A* (but it, unfortunately, is available in 36-exposure cartridges only).

If one film must be used for everything (outdoor and indoor)—and this is important to many amateurs who wish to take pictures under all conditions on the same roll of film—Eastman Kodak Co. recommends:

1. Use of Type F color film with clear flash bulbs for indoor shots, and with a *Wratten 85C* filter for daylight exposures outdoors. With this filter, the exposure index for *Kodachrome Type F* is 10, for *Ektachrome Type F*, 20. Where the speed of the film is important, it is better to use the Type F indoor film for all purposes as the speed loss is less than when using daylight film indoors. *Kodachrome Daylight* (outdoor) film used indoors with blue flash lamps has only about half the speed of *Kodachrome Type F* used with clear flash lamps.

2. Use of *Daylight* film for outdoor shots and

FILTER RECOMMENDATIONS FOR COLOR FILMS

Designation of type of film	Lighting by					
	Daylight		Flash		Photoflood	
	A.S.A. Index	Filter	Guide No.*	Type	A.S.A. Index	Filter
Kodachrome Daylight	10	None required ¹	45	Blue flash lamps	2.5	80A
Kodachrome Professional, Type A ³	10	85	80	81C with clear flash lamps ⁴	16	None required
Kodachrome, Type F	10	85C	95	Clear flash lamps	10	82A
Ektachrome Daylight	32	None required	95	Blue flash lamps	10	80B
Ektachrome, Type F	20	85C	120	Clear flash lamps ²	16	82A
Ansochrome Daylight	32	None required	95	Blue flash lamps	8	Anso No. 10 or 80A
Ansochrome, Type F	25	85C	105	Clear flash lamps	20	82A

¹ Kodak Skylight Filter No. 1A can be used to warm up tones (reduce the tendency toward bluishness).

² With M-2 lamps, use No. 81 filter; with SM and SF lamps, use No. 82B filter.

³ Available only in 36-exposure rolls.

⁴ SM and SF bulbs do not require use of 81C filter.

* With No. 5 or 25 bulbs at 1/25 second.

the same film with blue flash lamps for indoor shots. When used with blue flash lamps, daylight film requires one stop more exposure than Type F film with clear flash lamps.

Using indoor film outdoors and outdoor film indoors may not give quite as good color rendition as when the films are used for the specific

conditions for which they are designated. However, the results obtained by using one type of film for all exposures will be nearly enough satisfactory to meet the requirements of the average amateur, and the gain in flexibility and convenience is very great, of course; besides one can make one camera do, instead of two.

Menders for plastic garden hose

WHEN a garden hose made of plastic breaks or springs a leak, temporary repairs are often made by using friction or adhesive tape, but such repairs are short-lived and seldom effective. The hose can be repaired permanently, however, by cutting out a small section where the break occurred and joining the ends with a suitable connector. These connectors will not repair a leaky coupling.

Several repair kits for mending plastic garden hose are now on the market. Two such devices, the *Res-Q Plastic Garden Hose Mender* and the *Green Spot Dura-Seal Mender*, were recently tested by Consumers' Research. The *Res-Q Plastic Garden Hose Mender* consists of a short brass connector, over which the ends of the hose to be mended are slipped, and a steel clamp. The clamp fits over the entire joint to complete the repair. The *Green Spot Dura-Seal Mender* uses a brass connector and two internally threaded brass sleeves, which screw over the hose at the joint.

CR found that these repair kits were easy to install and remove (in case one would want to use the mender on another hose). The only tool required to make the repair is a knife, which is used to square the ends of the hose before joining. A pair of pliers or a small wrench may be needed to tighten the *Green Spot* mender sufficiently to prevent leaks. Hose mended with each repair kit was tested at a water pressure of 100 pounds per square inch. Because of the all-brass construction of the *Green Spot Dura-Seal Mender*, it was considered preferable to the type such as that of the *Res-Q Plastic Garden Hose Mender*, which used a steel clamp, since garden hose encounters moisture for long periods during use.



The photograph shows the parts involved in the hose-mending devices, and the manner in which a repair is effected in plastic garden hose. At the top: the *Res-Q Plastic Garden Hose Mender*. At the bottom: the more desirable *Green Spot Dura-Seal Mender*.

A. Recommended

Green Spot Dura-Seal Mender (Scovill Co., 100 Mill St., Waterbury 20, Conn.) 60c. For 7/16-in. hose. Made of brass. Easy to install, and the repair did not leak at a pressure of 100 lb. per sq. in.

C. Not Recommended

Res-Q Plastic Garden Hose Mender (Res-Q Products Corp., Box 211, Van Nuys, Calif.) 49c. For 1/2-in. hose. Did not provide a leakproof repair, and the steel clamp used to hold the hose on the connector is less likely to resist rust or corrosion than a non-rusting alloy such as that used in the *Green Spot*.

A pocket-size life preserver

THE *Floto* life preserver offers advantages that make it attractive to vacationers, sportsmen, campers, fishermen, etc. In an emergency, the device is inflated by squeezing "the two long edges toward each other." This releases the gas enclosed within the plastic envelope and inflates the preserver to about three-fourths of its capacity. The device has a two-way valve to permit further inflation by mouth and for deflating. The preserver, when new, measured a compact $5\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ inches and weighed 8 ounces. Inflated, it measured 41 inches long by about 3 inches in diameter. It is made of a brilliant yellow vinyl plastic, and floats even before it is inflated. It can be carried ready for use, in the uninflated condition, in a pocket, fastened to a belt, or pinned to clothing.

Before the device, after use, can be inflated again by cartridge and used as a life preserver, it must be returned to the manufacturer for recharging, resealing, and repacking.

In CR's tests, the *Floto* life preserver was found to have merit, but its performance fell short of the claims made for it. According to the manufacturer "Just squeeze *Floto* in your hand and it instantly inflates to 22½ lbs. of buoyancy—more than enough to keep two adults afloat." The sample tested by CR had sufficient buoyancy (about 12 pounds) to hold up one adult but not two, even when it was fully inflated, by mouth. Although the device was not considered hard to squeeze, it might be difficult for a woman or child with a small hand to operate the self-contained inflation cartridge, particularly if the person were panicky, in the water. Blowing up the preserver by mouth, moreover, was a somewhat difficult operation and might present a serious problem if a person were trying to keep afloat in rough water.

As a piece of emergency equipment, *Floto* has merit. The price of \$3.95, plus \$1 for each recharge, is considered high, but the *Floto* has the



advantage over other types of life preservers, such as the regular Kapok, Mae West, or cushion type, in that it is compact. Preservers requiring a manual operation, such as *Floto*, however, have one big disadvantage—if a person is knocked unconscious, he could not operate such a device. One that would be effective would be one that would inflate itself at once on contact with water.

B. Intermediate

Floto (Lucas Mfg. Co., 4156 N. Lowell Ave., Chicago 41) \$3.95 originally, \$1 for each recharge. Measures $5\frac{1}{2} \times 3\frac{1}{2} \times 1\frac{1}{2}$ in. when folded, 41 in. long by 3 in. in diameter when inflated. Will provide buoyancy for one adult. Floats on water when folded and deflated; inflated to $\frac{3}{4}$ capacity by internal gas cartridge by squeezing in the palm of the hand; can be inflated further by mouth. Could be a valuable piece of emergency equipment for persons around water, such as fishermen, duck hunters, boatmen, etc. Claims somewhat exaggerated. 3

"Canned ice"

ICE COOLS surrounding materials by absorbing heat from them. A cake of ice as a cooling agent for the picnic basket has one major drawback: when the ice melts, other things get wet. If the water is drained away, the cooling capacity that remains in the cold water is wasted.

A number of companies have marketed brands

of freezable materials in cans or plastic bags to overcome these objections. These containers, priced over the wide range of 29 to 98 cents and holding one pint, are to be frozen in a refrigerator or freezer, then used as ice would be. They may be refrozen and re-used many times.

Advertising for these products claims a good

deal more than mere convenience. Unfortunately, statements such as "One quart equals 15 pounds of ice," "Keeps food cold up to 72 hours," and "12 degrees colder than ice" have little relation to the actual cooling capacity of the products. CR tested three ice substitutes and found each approximately equivalent in effect to an equal weight of ordinary ice (as was to be expected).

The cooling effect of a substance (the amount of heat it can absorb to produce a low temperature in its surroundings) depends on several things: its temperature, the amount of heat (in calories, or British thermal units) it absorbs for each degree its temperature rises (specific heat), and the amount of heat it absorbs in melting (heat of fusion). The starting temperature depends only on the freezing-compartment temperature of the refrigerator or freezer used and so will be the same for any of the household cooling gadgets. Some of the ice substitutes do have a lower freezing point than water, but this is accompanied by a lower heat of fusion, which

decreases the total cooling capacity. The amount of heat absorbed *in melting* is normally very much larger, and therefore far more important in determining total cooling capacity, than the heat absorbed by a material due to its being at a temperature slightly below freezing. Consumers' Research knows of no substance that could be used for this purpose that has a heat of fusion as high as plain water.

Consumers who have occasional need of ice substitutes can make their own by freezing a can of fruit juice (not the frozen concentrate) and using it in the same manner as the commercial "canned ice." A few such freezings will not noticeably affect the taste and food value of the fruit juice for subsequent use, and the method is less expensive than even the cheapest of the ice substitutes. Or empty milk cartons may be filled with water and frozen for this use. (About 10 percent of the volume of the carton should be left unfilled, to permit expansion when the water freezes.)

Corrections and Emendations to Consumers' Research Monthly Bulletins

Radio tuners
AM-FM, FM
Page 27, Col. 1
May '56 Bulletin

The Allied Radio Corp. have informed Consumers' Research that the *Knight Model 727* FM tuner briefly mentioned as satisfactory for local FM reception is no longer available.

Radio tuners
AM-FM, FM
Page 29
May '56 Bulletin

The manufacturer has informed CR that latest production of the *National Criterion* AM-FM tuner includes the 10-kilocycle whistle filter, which was not present on the tuner tested. The present price of the tuner is \$189.95 (not \$170, as reported).

Room Air
Conditioners
Page 22
June '56 Bulletin

Change the rating of the *Mitchell Model M-346* air conditioner from *C. Not Recommended* to *B. Intermediate*. Leakage current measurements were taken on three additional samples of the *Mitchell*; leakage currents were found sufficiently low to warrant the higher rating than that originally assigned (with the proviso that the purchaser will see that the conditioner he buys is equipped with a 3-prong grounding plug—which was present on 10 of the 13 conditioners in the test).

Room Air
Conditioners
Pages 18, 20, 22
June '56 Bulletin

Change rating of *Emerson Super Compact Model E7G1* from *C. Not Recommended* to *B-*. An error was made in determining the amount of room air circulation for this conditioner. The figures and comments in columns 6, 7, and 8 of the table on page 20, and the one-line black-face type comment in the listing on page 22 relating to this model should be deleted. On a retest of this appliance, it was found that relative cooling capacity and relative efficiency in use of electricity were low, and that room air circulation was 260 cubic feet per minute (not 155 as given in the table). In the graph on page 22, the new curve for the *Emerson E7G1* will fall somewhat below that for the *Admiral 75F5S*. In the legend for the pictures at the top of page 18, change the last sentence to read, "This arrangement accounts in part for the performance of the *Emerson E7G1*. The manufacturer used the method of construction shown so that this model could be permanently installed, or used in a casement window, or placed on a cart (available at \$50 extra) and used as a portable conditioner, that can be merely wheeled to a position in front of a window or moved from room to room."

Off the editor's chest

(Continued from page 2)

the factory; the customer, if he is to get what he paid for, should be given a new car that was properly inspected, and in first-class condition. Mr. Reuther might secure some support from auto buyers, who in the long run are the ones that provide the members of his union with steady employment, if he were to look into this matter of unsatisfactory cars, turned out by workers on the assembly line, that go out of the plant to be delivered to consumers.

As the number of legal precedents continues to mount of cases where purchasers have sued successfully to have the manufacturer's warranty on a new car executed in accordance with the terms set forth, it is becoming obvious that dissatisfaction on the point of poor workmanship and inspection is an increasingly important factor and one that must be reckoned with. Senator Wallace F. Bennett, Utah, in introducing his and Senator Frederick G. Payne's bill to protect the public in the fulfillment of warranties on automobiles and electrical appliances (S. 3543), pointed out that these products are growing in variety and complexity, and they are purchased from independent dealers on whom the purchasers must rely for service, as well as sales. The Senators' bill therefore aimed at setting up the conditions under which the shared responsibility of the manufacturer and the dealer could be spelled out in the franchise agreement. When the consumer underwrites the price of a new automobile these days, he is not going to be satisfied with what is known as a "lemon," or even one that has what the dealer considers to be only a few "minor defects."

The high prices of the new cars and the difficulty of ascertaining the exact price of a particular model until after the sales contract is signed have been another source of consumer discontent. The constant succession of price rises due to increased wages and "fringe benefits" in the automotive and related fields has been concealed by one device or another. One technique has been to bill, as extras, items that were formerly sold with the car as standard equipment. Such items as clocks, fender skirts, foam-rubber cushions, and even windshield wipers are now "optional," and charged as extras. As one dealer noted to *Automotive News*, the buyer "knows darned well these came with the car in 1955." Another dealer commented that his new car sales were off 75 percent in one month because of ill feeling over the price issue. Still others say that customers complain that they have been priced right out of the market.

Another problem appears in retrospect to be that people bought too many cars last year. Perhaps from the consumer's standpoint it was a smart thing to do. Prices of cars have been going up, and the cost of installment financing is headed higher. There is probably little chance that labor in the automotive and related fields could price itself out of the market, but, in this connection, it is interesting to note that the German *Volkswagen*, which sells at around \$1500 delivered on the Eastern seaboard, is in such demand that plans were made to produce it at the former Studebaker-Packard plant at New Brunswick. After the factory had been purchased, however, it was discovered that production costs in the United States were so high that the price would have to be raised to too high a figure for the little car to compete successfully with the big American-made cars, and the project was abandoned. The car, made by European labor, will continue to be imported.

Consumers are temperamental, and economists are working diligently to find out what, if any, rules or patterns their habits of choice follow. As Dr. Arthur F. Burns of the President's Council of Economic Advisors has pointed out: "The consumer has emerged as a complex economic personality . . . capable . . . of stirring up economic uncertainty." That he is certainly doing in the automotive industry. With the length of service that can be expected from the average automobile, there are a number of consumers who don't feel the need of buying a new car this year, not to mention those who are still paying for last year's purchase on the no-money-down 30-months-to-pay deals. The oversupply of cars at the present time indicates that consumers are not pleased, for a variety of reasons that the survey takers will doubtless uncover, with the current merchandise, considering its higher and higher prices and higher cost of servicing.

It will be wise for manufacturers, dealers, labor, and others along the chain of supply to take stock of the situation, find out just what the trouble is, and put things in order. As Dr. Burns has astutely put it: "What does the increasing proportion of consumer outlay on goods that need not be purchased continuously, either because they have a long life of service built into them or because they are of a luxury character, signify for the problem of maintaining economic stability in the future?" The answer in the automobile field at the present time is that consumers are in a position to cause considerable instability in the economy if they are not more considerately treated by those who determine marketing policies.

Ratings of Motion Pictures

THIS section aims to give critical consumers a digest of opinion from a wide range of motion picture reviews, including the motion picture trade press, leading newspapers and magazines—some 19 different periodicals in all. The motion picture ratings which follow thus do not represent the judgment of a single person, but are based on an analysis of critics' reviews.

The sources of the reviews are:

Boxoffice, Cue, Daily News (N. Y.), The Exhibitor, Films in Review, Harrison's Reports, Joint Estimates of Current Motion Pictures, Motion Picture Herald, National Legion of Decency, Newsweek, New York Herald Tribune, New York Times, The New Yorker, Parents' Magazine, Release of the D. A. R. Preview Committee, Reviews and Ratings by the Protestant Motion Picture Council, The Tablet, Time, Variety (weekly).

The figures preceding the title of the picture indicate the number of critics whose judgments of its entertainment values warrant a rating of A (recommended), B (intermediate), or C (not recommended).

Audience suitability is indicated by "A" for adults, "Y" for young people (14-18), and "C" for children, at the end of each line.

Descriptive abbreviations are as follows:

adv—adventure
biog—biography
c—in color (Anisco, Eastman, Technicolor, Trucolor, Warner Color, etc.)
car—cartoon
com—comedy
cri—crime and capture of criminals
doc—documentary
dr—drama
fan—fantasy
hist—founded on historical incident
mel—melodrama
mus—musical
mys—mystery
nov—dramatization of a novel
rom—romance
sci—science fiction
soc—social-problem drama
trav—travelogue
war—dealing with the lives of people in wartime
wes—western

A	B	C	
—	5	8	Adorable Creatures (French).....com A
3	6	7	Alexander the Great.....hist-dr-c AY
—	6	8	All that Heaven Allows.....dr-c A
—	4	3	Angel Who Pawned Her Harp, The (British).....fan A
—	4	1	Animal World, The.....doc-c AY
2	11	5	Anything Goes.....mus-com-c AY
—	6	9	Artists and Models.....mus-com-c AY
1	10	2	At Gun Point.....wes-c AY
1	3	3	Autumn Leaves.....dr A
—	—	3	Awara (Indian).....nov A
1	3	1	Away All Boats.....war-dr-c AY
—	6	4	Backlash.....wes-c A
1	6	2	Ballet of Romeo and Juliet, The (U.S.S.R.).....doc-c AY
—	3	6	Battle Stations.....war-dr AY
—	—	3	Beast with 1,000,000 Eyes, The.....sci A
5	9	3	Benny Goodman Story, The.....mus-biog-c AY
—	—	6	Betrayed Women.....soc-mel A
4	4	—	Bhowani Junction.....mel-c A
—	8	9	Birds and the Bees, The.....com-c A
—	5	5	Blackjack Ketchum, Desperado.....wes AY
—	1	2	Bobby Ware Is Missing.....mys-mel AY
—	11	5	Bold and the Brave, The.....war-com A
1	6	9	Bottom of the Bottle, The.....mel-c A
—	2	5	Brain Machine, The (British).....cri-mel A
—	2	5	Broken Star, The.....wes A
7	8	1	Carousel.....mus-dr-c A
—	3	6	Cash on Delivery (British).....com A
1	3	2	Catered Affair, The.....dr A
2	9	—	Cockleshell Heroes (British).....war-dr-c AY

A	B	C	
—	7	2	Comanche.....hist-dr-c AY
—	9	2	Come Next Spring.....dr-c AY
—	1	7	Come On, The.....cri-mel A
1	5	11	Conqueror, The.....adv-c A
3	14	1	Court Jester, The.....com-c AY
6	9	1	Court Martial of Billy Mitchell, The.....biog-c AY
—	3	9	Creature Walks Among Us, The.....sci A
—	1	4	Crime Against Joe.....cri-mel A
1	3	8	Crime in the Streets.....soc-mel A
1	3	6	Crooked Web, The.....cri-mel A
—	—	3	Cross Channel (British).....mel AY
—	2	4	Dance Little Lady (British).....dr-c A
—	1	4	Dark River (Argentine).....dr A
—	4	5	Day of Fury, A.....wes-c A
—	1	4	Day the World Ended.....sci A
—	6	6	Diabolique (French).....mys-mel A
—	8	9	Diane.....hist-dr-c A
—	12	5	Doctor at Sea (British).....com-c A
2	6	3	Don Juan (Austrian).....mus-dr-c A
—	1	2	Dr. Knock (French).....com A
—	2	4	Emergency Hospital.....mel A
—	1	11	Flame of the Islands.....mel-c A
—	13	2	Forbidden Planet.....sci-c A
1	3	2	Foreign Intrigue.....mys-mel-c A
—	7	10	Forever, Darling.....com-c AY
—	5	3	French Can Can (French).....mus-com-c A
—	4	5	Frisky (Italian).....dr A
—	4	5	Fury at Gunsight Pass.....wes AY
—	8	6	Gaby.....war-dr-c A
—	2	5	Ghost Town.....wes AY
—	6	2	Glory.....dr-c AY
—	5	5	Godzilla, King of the Monsters (Japanese).....sci A
1	6	3	Golden Demon (Japanese).....dr-c A
5	7	4	Good Morning, Miss Dove.....dr-c AY
2	6	1	Goodbye, My Lady.....dr AY
—	1	2	Great Day in the Morning.....mel-c A
—	4	1	Great Locomotive Chase, The.....hist-dr-c AY
6	6	4	Guys and Dolls.....mus-com-c A
3	10	4	Harder They Fall, The.....mel A
—	6	3	Heide and Peter.....dr-c AY
3	7	7	Helen of Troy.....hist-dr-c A
—	5	8	Hell on Frisco Bay.....cri-mel A
—	5	4	Hell's Horizon.....war-mel A
—	3	1	Hidden Guns.....wes-mel-c AY
—	3	11	Hilda Crane.....dr-c A
1	6	—	Hill 24 Doesn't Answer (Israeli).....war-dr AY
—	2	3	His Excellency (British).....dr A
—	6	5	Hot Blood.....mus-dr-c A
1	5	1	House of Ricordi (Italian).....mus-biog-c A
—	4	6	Houston Story, The.....cri-mel A
4	8	5	I'll Cry Tomorrow.....mus-biog A
—	1	3	Indestructible Man, The.....cri-mel A
—	9	6	Indian Fighter, The.....mel-c A
—	—	3	Inside a Girls' Dormitory (French).....cri-mel A
—	3	8	Inside Detroit.....mel A
—	4	2	Invasion of the Body Snatchers.....sci A
—	1	3	Invitation to the Dance.....mus-doc-c A
—	—	3	Jaguar.....mel AY
—	4	7	Joe Macbeth.....cri-mel A
—	3	9	Jubal.....wes-c A
—	4	4	Kettles in the Ozarks, The.....com AY
—	5	4	Kid for Two Farthings, A (British).....dr-c A
—	5	5	Killer Is Loose, The.....cri-mel A
—	3	1	Killing, The.....cri-mel A

A	B	C		
1	10	5	Kismet	mus-com-c A
—	10	4	Ladykillers, The (British)	com-c A
—	3	11	Last Frontier, The	wes-c A
—	10	6	Last Hunt, The	dr-c A
—	1	2	Last of the Desperados	wes AYC
2	7	3	Last Ten Days, The (Austrian)	war-dr A
—	7	3	Lawless Street, A	wes-c A
—	1	9	Lease of Life (British)	dr-c A
—	5	4	Leather Saint, The	dr AYC
—	2	6	Let's Make Up (British)	mus-fan-c A
1	6	1	Letters from My Windmill (French)	dr A
—	8	9	Lieutenant Wore Skirts, The	com-c A
2	12	4	Littlest Outlaw, The	dr-c AY
—	11	3	Lone Ranger, The	wes-c AYC
—	—	4	Lord of the Jungle	mel AYC
2	6	6	Lovers and Lollipops	dr A
2	1	1	Lucky Kid, The (British)	dr-c AYC
1	5	2	Madame Butterfly (Italian)	mus-dr-c A
—	—	4	Mademoiselle—Age 39 (Greek)	com A
—	4	4	Magic Fire	mus-biog-c A
—	3	3	Make Me an Offer (British)	dr-c A
6	6	2	Man in the Gray Flannel Suit, The	dr-c A
3	9	2	Man Who Knew Too Much, The	mys-mel AYC
7	10	1	Man Who Never Was, The (British)	mys-mel-c AY
1	8	6	Man with the Golden Arm	soc-dr A
—	1	8	Manfish	cri-mel-c A
—	5	1	Maverick Queen, The	wes-c AYC
3	12	3	Meet Me in Las Vegas	mus-com-c A
—	7	6	Miracle in the Rain	dr A
—	6	1	Mohawk	dr-c A
—	1	3	Murder on Approval (British)	mys-mel A
—	3	2	My Seven Little Sins (French)	com A
—	3	6	Naked Night, The (Swedish)	dr A
1	13	1	Naked Sea, The	doc-c AYC
1	8	4	Never Say Goodbye	dr-c AYC
1	10	1	Night My Number Came Up, The (British)	war-dr A
—	3	3	Nightmare	cri-mel A
—	2	2	1984	fan A
—	2	3	No Man's Woman	mys-mel A
5	7	—	On the Threshold of Space	sci-dr-c AYC
—	3	—	On the Twelfth Day	fan-c AYC
—	—	4	One Step to Eternity (French)	dr A
—	1	4	One Way Ticket to Hell	soc-dr A
—	7	2	Our Miss Brooks	com A
—	1	2	Outlaw Treasure	wes AYC
—	5	2	Outside the Law	mel AYC
—	1	7	Over-Exposed	cri-mel A
—	2	4	Paris Follies of 1956	mus-c A
2	9	5	Patterns	dr AY
—	—	5	Phantom from 10,000 Leagues, The	sci A
7	7	3	Picnic	dr-c A
—	4	1	Please Murder Me	cri-mel A
—	4	4	Postmark for Danger (British)	mys-mel A
—	8	—	Price of Fear, The	cri-mel A
—	1	4	Quincannon, Frontier Scout	war-mel-c AYC
—	1	2	Race for Life, A (British)	mel A
1	3	4	Rack, The	war-dr A
3	7	6	Rains of Ranchipur, The	nov-c A
4	7	5	Ransom	cri-mel A
—	8	1	Red Sundown	wes-c A
—	6	4	Return of Don Camillo, The	dr A
1	2	8	Revolt of Mamie Stover, The	soc-mel-c A
7	6	3	Richard III (British)	dr-c AY
1	4	1	River Changes, The (Italian)	dr A
—	2	1	Riviera (Italian)	dr-c A
—	6	—	Road to Denver, The	wes-c AYC
—	5	4	Rock Around the Clock	mus-com A
—	1	6	Rosanna (Mexican)	dr A
1	12	4	Rose Tatoo, The	dr A
—	—	5	Royal Bed, The	dr-c A
—	2	13	Running Wild	soc-mel A
—	6	1	Safari	mel-c A
1	7	2	Samurai (Japanese)	dr-c A

A	B	C		
—	5	4	Scarlet Hour	cri-mel A
3	4	2	Searchers, The	wes-c A
—	—	3	Secret of Treasure Mountain	wes A
3	7	5	Serenade	mus-dr-c AY
4	4	2	Seven Wonders of the World	trav-c AYC
—	6	7	Shack Out on 101	mys-mel A
1	8	6	Sincerely Yours	mus-dr-c AY
—	1	2	Singing in the Dark	mus-dr A
—	6	—	Sins of the Borgias (Italian)	dr-c A
—	2	9	Slightly Scarlet	cri-mel-c A
—	6	5	Spoilers, The	mel-c A
—	9	1	Square Jungle, The	mel A
—	6	1	Star in the Dust	wes-c A
—	1	7	Star of India (British)	adv-c AY
—	3	6	Steel Jungle, The	soc-mel A
—	4	5	Storm Fear	mel A
—	4	—	Storm Over the Nile (British)	war-mel-c AY
1	5	—	Stranger at My Door	dr A
—	4	2	Sudden Danger	cri-mel A
4	9	2	Swan, The	dr-c AYC
—	6	5	Tarantula	sci AY
—	6	5	Target Zero	war-dr AY
3	12	4	Tender Trap, The	com-c A
—	—	5	Terror at Midnight	cri-mel A
—	5	4	Texas Lady	mel-c AY
1	6	9	There's Always Tomorrow	dr A
—	3	—	They Who Dare (British)	war-mel A
—	4	3	This Strange Passion (Mexican)	dr A
—	12	—	Three Bad Sisters	dr A
1	10	2	Three Stripes in the Sun	war-dr A
—	6	4	Timetable	mys-mel A
—	4	4	Too Bad She's Bad (Italian)	com A
—	4	5	Top Gun	wes AYC
2	8	3	Touch and Go (British)	com AYC
—	2	4	Toughest Man Alive, The	mel A
1	6	—	Toy Tiger	com-c AYC
4	2	3	Trapeze	mel-c A
—	9	3	Tribute to a Bad Man	wes-c A
2	5	1	23 Paces to Baker Street	mys-mel-c AYC
—	1	2	Two-Gun Lady	wes AYC
—	4	—	Unmarried Mothers (Swedish)	soc-dr A
—	1	7	Uranium Boom	mel A
1	3	1	Unidentified Flying Objects	doc AYC
—	5	5	Vanishing American, The	wes AYC
—	10	6	View from Pompey's Head, The	dr-c A
—	3	3	Way Out, The (British)	cri-mel A
—	2	2	White Sheik, The (Italian)	com A
—	3	1	Wedding in Monaco, The	doc-c AYC
—	3	—	Wetbacks	mel-c A
—	8	4	While the City Sleeps	cri-mel A
—	2	3	Wiretapper	cri-mel A
—	4	8	World in My Corner, The	mel AYC
—	3	2	World Without End	sci-c AY
—	5	—	Zanzabuku	doc-c AYC

Reissues (oldtimers you may have seen before) as previously rated in the CR Bulletin indicated:

A	B	C		
9	9	—	Annie Get Your Gun (Nov. '50)	mus-com-c A
1	5	9	April in Paris (June '53)	mus-com-c A
4	10	3	Bend of the River (Aug. '52)	wes-c AYC
4	13	—	Big Sky, The (Feb. '53)	wes-mel A
4	11	1	Broken Arrow (Jan. '51)	dr-c AYC
—	7	5	Carson City (Nov. '52)	wes-mel-c AYC
4	7	5	Cyrano de Bergerac (June '51)	dr A
14	3	—	Fantasia (Di., June '41)	mus-fan AY
1	12	3	Guy Named Joe, A (Aug. '44)	war-dr A
1	2	7	Ivanhoe (Jan. '53)	nov-c AYC
—	10	6	One Minute to Zero (Feb. '53)	war-mel A
9	6	2	Spellbound (June '46)	dr A
4	14	—	Stratton Story, The (Nov. '49)	dr AYC
2	11	1	Tall in the Saddle (July '45)	wes AYC
10	6	—	Taproots (March '49)	dr-c A
9	6	—	Third Man, The (July '50)	cri-mel A
2	9	4	Three Musketeers (May '49)	dr-c AY
—	8	7	Unconquered (June '48)	hist-c A
—	10	2	Walk A Crooked Mile (Apr. '49)	mel A
7	10	—	Yearling, The (May '47)	dr-c AYC

The Consumers' Observation Post

(Continued from page 4)

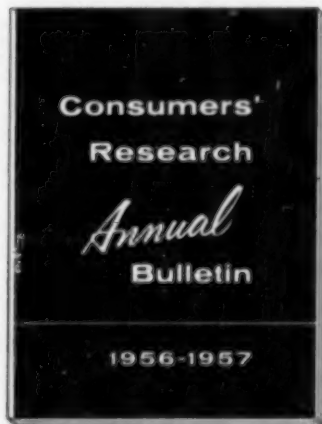
ANTIBIOTIC DRUGS are expected to be used extensively in the food industry, if the chemists have their way. Experiments are now being conducted to demonstrate how effectively aureomycin (chlortetracycline, under the trade name of Acronize), and another called Biostat, will delay spoilage of fresh foods. Salmon, for example, packed in ice containing a certain amount of an antibiotic kept fresher for about a week longer than salmon packed in untreated ice. Other types of fish and beef carcasses can also have their "shelf-life" extended by similar treatment. The future looks dark, indeed, for those who have an allergy reaction or are unpleasantly sensitive to antibiotics. It is hoped that the Food and Drug Administration will police such uses carefully to make certain that established minimum tolerances are observed.

* * *

DOGS ARE OFTEN FED AS WELL AS PEOPLE and from the same table. In a survey made by Paul F. Ellis and Dana P. Kelly Associates, it turned out that 40 percent of dog owners answering the questionnaire reported that at least part of the diet for their pets included table scraps. Over half indicated that they fed their grown dogs only once a day. Some admitted sneaking food to their pets under the family table at mealtimes, a practice frowned on by veterinarians.

* * *

GASOLINE has been marketed until recently as regular and premium. In order to provide improved gasoline with higher octane ratings for late-model automobiles, some companies are experimenting with other grades. This past year the Sun Oil Company which formerly put out only one grade has been experimenting in Florida with a new pump that dispenses five octane ratings. The method requires a special pump and two tanks, one of gasoline and one of concentrate. The mixture is controlled by a dial setting made by the attendant at the service station. There is a five-cent differential between the lowest and the highest grade. There is no advantage in putting a higher octane gasoline into a car than its engine can use, and most premium gasolines are needed on only a few makes at present. The new marketing technique by Sun Oil will give the consumer a choice of a lower-priced gasoline if his car can operate efficiently on the lower octane values.



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READY MIXES AND PREPARED FOODS are now being used by restaurants and lunch counters. According to The Wall Street Journal, such foods as pancake mixes, instant coffee, cake mixes, frozen French fried potatoes, and frozen Chinese food, as well as frozen meats, are being served to diners in public eating places ranging from expensive restaurants to stand-up lunch counters and factory cafeterias. It remains to be seen whether the customers approve of this trend. The newspaper reports that some chefs in gourmet restaurants are horrified at the thought that a prepared product is supposed to equal or excel the result of their efforts, but the food companies, as one might expect, maintain that their wares are every bit as good as restaurant food freshly prepared.

* * *

NEW OR NEWLY TESTED:

Home Outdoor Drinking Fountains. Two simple devices to be attached to an outdoor faucet or hose connection to provide drinking water in the yard or garden were examined and tested for performance by CR. The better of the two is listed first.

Camco Outdoor Bubbler (Camco Division of Cambridge Tool & Mfg. Co., Inc., Somerville, Mass.), \$3.95. The device consisted of two metal pipes, with a garden hose attachment, a hexagon nut and two mating pieces with serrated faces to adjust the angle, a push-button "on-off" valve, a control screw to regulate the height of the water stream, a coupling to connect the device to an outdoor faucet, and a plastic cup to catch the water stream. The nozzle is so arranged that children cannot put their fingers over the fountain orifice and make a spray with it. The water flow was delivered in an inclined arc so as to prevent the return of water to the orifice from which the jet was issued. This is the type of design that is recommended by the American Public Health Association to prevent water that has come in contact with the lips from being returned to the nozzle. The bubbler operated properly, but it was necessary to adjust the control screw to maintain a normal flow of water if there were marked changes in water pressure, such as would occur with some water pumps and systems.

Backyard Bubbler (Research Engineering Co., Eastondale, Mass.), \$4.95. This device consists of two metal pipes which pull up against a spring for operation, a green plastic fountain cup, and a combination faucet and hose attachment. It operated fairly satisfactorily, but the stream of water issued directly from the bottom of the cup and so fell back on the orifice of the water jet after contact with the lips of the person drinking from it. This design is not considered desirable from the sanitary standpoint. It is therefore not considered as warranting recommendation for the purpose for which it is sold, as is the Camco Outdoor Bubbler.

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Phonograph Records

BY WALTER F. GRUENINGER

Please Note: The first symbol applies to quality of interpretation, the second to fidelity of recording.

Bach: *Tocatta and Fugue in D Minor, Alla Breve, Tocatta in E Major, Canzona in D Minor.* Weinrich (organ). Westminster WN 18148. \$3.98. Superb playing and recording of fine organ pieces. AA AA

Mahler: *Symphony No. 6.* Rotterdam Philharmonic under Flipse. 4 sides, Epic SC 6012. \$7.96. Long work, rarely performed. Exceptionally well played. Marvelous fidelity. AA AA

McPhee: *Tabuh-Tabuhan & Carter: The Minotaur.* Eastman-Rochester Symphony under Hanson. Mercury MG 50103. \$4.98. The attraction is the McPhee piece, inspired by Balinese gamelon techniques. Pure joy, in its unusual percussive effects, for hi-fi fans. Elliott Carter's suite from the ballet is more prosaic. Fine recording and playing of both works. AA AA

Mendelssohn: *Violin Concerto & Mozart: Violin Concerto No. 4.* Oistrakh with the Philadelphia Orchestra under Ormandy. Columbia ML 5085. \$3.98. Both works are great. Oistrakh's playing of the Mendelssohn is light, airy, not rushed. The Mozart sounds more elegant when Heifetz plays it. Oistrakh is straightforward and robust. Fine orchestral support. AA AA

Mozart: *Litanies Lantanae.* Vyvyan, Evans, Herbert, James, etc., under Lewis. L'Oiseau-Lyre. OL 50085. \$4.98. Beautiful sacred work written in the Neapolitan operatic style. Vocal parts are more instrumental in character than in Mozart's later sacred works. Expert performance and recording. AA AA

Mozart: *Sonatas Nos. 10 and 15.* Heifetz (violin), Smith (piano). RCA Victor LM 1958. \$3.98. Simple, touching music. Heifetz is less the dashing virtuoso than usual, letting the music speak for itself. And his partner, just a little farther from the mike than ideal, plays very well, too. AA AA

Nielsen: *Symphony No. 3.* Danish National Orchestra, Guldback (soprano), Sjöberg (baritone), under Frandsen. Epic LC 3225. \$3.98. This vivid, gay symphony hails from Denmark, 1911, and stems from Brahms, Bruckner. It's worth hearing. Expressively played and fairly well recorded. AA A

Prokofiev: *Love of Three Oranges Suite.* London Philharmonic under Boult. *Lt. Kijé Suite.* Paris Conservatory Orchestra under Boult. London LL 1294. \$3.98. Popular orchestral works of this composer, one suite arranged from an opera and the other from a film. I'd welcome more bite and thrust in the playing but in other ways it's good. Recording less brilliant than most of the London disks. A A

Wagner: *Lohengrin.* Frick, Schöck, Cunitz, Metternich, Klose, etc., under Schüchter. 8 sides, RCA Victor LHMV 800. \$19.92. This performance is as good as any on disks, and the reproduction is better than its competitors'. So it becomes the No. 1 choice, just beating out Urania URLP 225. A A

Wagner: *Die Walküre.* Mödl, Suthaus, Frantz, etc., under Furtwängler. 10 sides, RCA Victor LHMV 900. \$24.90. In *Die Walküre*, Wagner demands a lot from his singers. He doesn't get 100 percent here. On occasion Rysanek as Sieglinde wobbles; Mödl as Brunnhilde sings carefully but doesn't always hit the note on the head; Frantz as Wotan fails to make the high notes sound pleasant and so on. The direction of Furtwängler is first rate and overall the performance is better than you're likely to hear at the Met. Good recording. A A

The Art of Emanuel Feuermann (cello). RCA Camden CAL 292. \$1.98. This distinguished cellist died, prematurely, before the advent of LP's so these pieces have appeared on 78's with the exception of the Mendelssohn *Sonata No. 2.* Expert cello playing with excellent support

at the piano by Franz Rupp. Recording is acceptable and should not stand in the way of purchase by those who appreciate fine cello playing of such standard pieces as Chopin's *Polonaise Brillante*, Davidoff's *At the Fountain*, Beethoven's *12 Variations from Mozart's Magic Flute*, and others. AA B

Gigli in Carnegie Hall (tenor). RCA Victor LM 1972. \$3.98. In April 1955, at the age of 65, Gigli gave three recitals in Carnegie Hall before wildly enthusiastic, packed houses. This recording was taken from the tapes of those concerts. For a man of 65 his singing is quite remarkable. All but his most ardent admirers would possibly admit that gone is a little of the control and velvet, though still present is the "grand effect" whether or not the composer wrote it that way. Yet this is a most interesting record of a tenor who first sang in the Met in 1920 and to whom the world still pays homage. Sung to piano accompaniment are 22 arias and songs. B A

Marching Along. Eastman Symphonic Wind Ensemble under Fennell. Mercury MG 50105. \$4.98. Twelve marches including "Stars and Stripes Forever," "American Patrol," "On the Mall," "El Capitan," played by 25 reeds, 16 brasses, 6 percussions, and 1 string bass. Stirring performance and superb recording. If you like marches, this is a must! AA AA

Monty. Mantovani and His Orchestra. London MS 1. \$1.98. Lush for some, featuring so many choirs of violins, but thousands like it. Here you'll find "Charmaine," "Wanting You," "One Fine Day," "Donkey Serenade," "One Enchanted Evening," etc. AA AA

Picnic. Boston Pops Orchestra under Fiedler. RCA Victor LM 1985. \$3.98. "Jalousie," "In a Persian Market," "Poet and Peasant Overture," "Danube Waves," and other well-known light pieces which appear on Boston Pops programs. Robustly played. AA AA

The Metropolitan Opera Record Club. This division of the Book of the Month Club, 345 Hudson St., New York 14, widely advertises records of abridged operas on a membership basis at \$4.50 per disk, plus handling and shipping charges. I have heard *Carmen* and *Rigoletto*. As a subscriber to the Met, I regard the cast of *Carmen* as a second or third string Met cast. Of the principals, Rosalind Elias as Carmen has pitch trouble and other faults; Kurt Baum as Don Jose strains, and sounds as though he were recorded acoustically, which, of course, he isn't; Lucine Amara is the best singer in the cast, but the role of Micaela demands more simplicity and lyricism than is her forte; Walter Cassel as Escamillo is acceptable. The direction of these highlights is under the experienced hands of Max Rudolf. Fidelity of the principal singers is excellent but the voices often drown out the orchestra. This is probably the best cast that could be assembled by the Met for an "independent" recording. The Met's top-flight singers are under contract, of course, to Columbia, Victor, etc. Overall—decently sung and recorded but not distinguished. *Rigoletto* starts off with a disadvantage—a stentorian, unidentified voice which sounds like Milton Cross explaining before each act what's going to happen. Again, the cast certainly is not studded with Met stars. It features the youthful wing. Barioni as the Duke and Laurel Hurley as Gilda are best of the principals. Robert McFerrin as Rigoletto falls far short of Leonard Warren who frequently sings Rigoletto at the Met and may be heard on the RCA Victor recording. Fausto Cleva conducts these highlights with commendable restraint and the fidelity is very good. Overall, a recommended disk though not the best *Rigoletto* available.

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